ZFP

Networkable Analogue Addressable Fire Alarm Control Panel

Standard 2 to 4 Loop Panel
Medium 2 to 8 Loop Panel
Large 2 to 8 Loop Panel

Compact Controllers

Installation, Maintenance & Programming Manual

Approved Document No. DFU5000503 Rev 3

WARNING !

DO NOT connect or disconnect the panel's internal wiring/looms, or terminate field wiring at the PCBs, with the panel's power applied (either Mains or battery).
Failure to observe this will destroy the panel's electronic components and the warranty will be void.

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1 IMPORTANT NOTES

READ THIS SECTION BEFORE INSTALLING/MAINTAINING THIS PRODUCT.

1.1 Items Supplied

- ZFP Fire Alarm Control Panel, as ordered.
- Installation, Maintenance & Programming manual (this manual) – Explains how to install, commission and maintain the fire alarm control panel. **This manual must not be left accessible to the user**.
- User Manual and Log Book (Document No. DFU5000501) – Gives detailed operational information and details about the panel's touchscreen, indicators and controls.
- Quick start guides for users (Document No. DFU5000502) and engineers (Document No. DFU5000504) – Summarize key information provided in the main manuals.
- Key for unfastening / securing the panel lid.
- Electrical accessory pack, containing:

  1 x 20mm 2ATH 250V HRC ceramic fuse (spare primary fuse)
  1 x 20mm 5A F glass fuse (spare battery fuse)
  1 x set of battery link wires and nylon cable ties
  4 x 6K8 0.25W EOL resistors for conventional sounder circuits (2) and auxiliary inputs (2)
  2 x 470R 0.25W trigger resistors for auxiliary input circuits.

1.2 Notices

WARNINGS!

This equipment must only be installed and maintained by a suitably skilled and technically competent person.

This equipment is a piece of Class 1 equipment and MUST BE EARTHED.

ALWAYS isolate the panel's Mains and battery backup supplies before making connections to its PCBs.

CE Marked

This product has been manufactured in conformance with the requirements of all applicable EU Council Directives.

Anti-static handling guidelines

Make sure that handling precautions for electro-static devices (ESD) are taken immediately before handling PCBs and other ESD components. Before handling any ESD items, engineers should get rid of any electro-static charge by touching a sound safety earth. Always handle PCBs by their sides and avoid touching any electronic components. PCBs should be stored in a clean, dry place that is free from vibration, dust and excessive heat.

Disclaimer

Errors and omissions excepted. No responsibility can be accepted by the manufacturer or distributors of this range of fire panels for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole. The manufacturer's policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.

1.3 System Design

Fire alarm system design is beyond the scope of this document. A basic understanding of general fire alarm system components and their use is assumed.

Contact the Fire Officer concerned with the property at an early stage in case he has any special requirements. We strongly recommend that a suitably qualified and competent person is consulted in connection with the design of the fire alarm system.

The equipment must be installed, operated and maintained in accordance with these instructions and the appropriate national, regional or local regulations. If in doubt please consult your supplier.

We recommend you read BS 5839 Part 1 "Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation, Commissioning and Maintenance)" available at your local reference library or from the BSI. Other national standards of installation should be referenced where applicable.

1.4 Equipment Guarantee

This equipment is not guaranteed unless the complete installation is installed and commissioned in accordance with the laid down national, regional or local standards (in the UK BS 5839 Part 1) by an approved and competent person or organisation.

2 ZFP KEY FEATURES

Dependant on the model purchased, the ZFP range of fire alarm control panels include the following features:

- Designed to comply with EN 54 Parts 2 and 4
- Compatible with Apollo's XP95 / Discovery communication protocols
- Three cabinet sizes are available:
  Standard – 1 slot, 2 modules (2 or 4 loops)
  Medium – 2 slots, 4 modules (2, 4, 6 or 8 loops)
  Large – 3 slots, 6 modules (2, 4, 6 or 8 loops)
- 'Compact' controller option (surface or flush mount versions)
- Modular construction
- Integral printer option with front loading paper
- 3A or 5A EN 54-4/A2 PSU and battery charger included in all panels
- Up to 18Ah batteries in a standard cabinet, up to 38Ah in the larger cabinet
- 4.3 inch, 472 x 248 pixel, 24 Bit, 16M colour LCD touchscreen
- Separate distinct LEDs for mandatory EN 54 indications plus programmable LEDs
- Up to 200 separate LEDs per panel, programmable as Zonal Fire LEDs or other
- 'Slide In' label system for customizable language labels/custom description of zones and programmable LEDs
- Two RS232 ports - one dedicated to a 40 column serial printer (optional), one for ancillary devices such as ESPA protocol alphanumeric pagers / DECT telephone systems
- Two RS485 ports – one for A-Bus (connects peripheral PCBs), one for FAT fault tolerant network.
- Integral 'galvanically - isolated' USB connection to a PC running programming tools
- Fault tolerant network – needs a separate multipath network PCB (Part No. ZHN)
- Up to 64, eight loop, peer-to-peer panel network capacity (max. distance between each 'node' = 1km)
- Two independently programmable 1A conventional sounder circuits – monitored
- Up to 10,000 programmable and indicatable system zones (maximum 200 zones per panel)
- 20,000+ event memory for all fire, fault and system events - all filterable
- Greater than 100,000 addressable device system capacity
- Three access levels – access level 1 (general user), access level 2 (authorised user) and access level 3 (authorised systems engineer) with keyswitch entry to access level 2
- Selectable language
- Real-time clock with automatic daylight saving time
- Standard upload download software includes facility to upload company logos – even from a simple .gif file from a camera
- Up to 16 GB (2 GB as standard) internal micro SD memory card (removable)
- Up to 38 characters of custom text per loop device

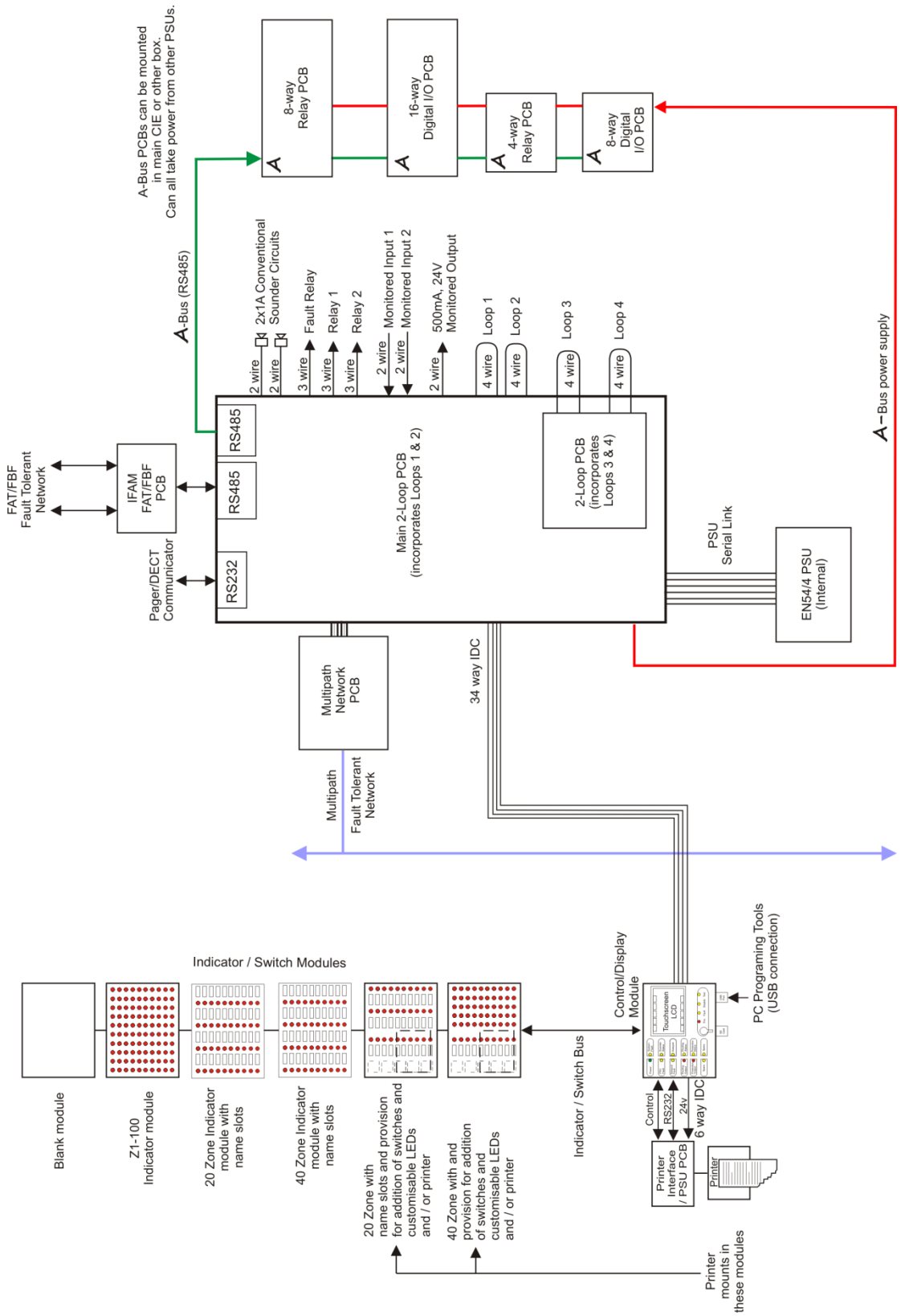
2.1 Networking (Optional)

If required, the panel can be configured to sit on a ZFP network; either a multipath network, or a singlepath network. To communicate over a network, each network node (panel or compact controller) requires an RS485 network interface PCB. See section 6 for details.

3 SYSTEM DESIGN

3.1 4 Loop ZFP Panel Block Diagram

Figure 1 – 4 Loop ZFP Panel Block Diagram


A-Bus PCBs can be mounted in main CIE or other box. Can all take power from other PSUs.
8-way Relay PCB
16-way Digital I/O PCB
4-way Relay PCB
8-way Digital I/O PCB
A-Bus (RS485)
2x1A Conventional Sounder Circuits
Fault Relay
Relay 1
Relay 2
Monitored Input 1
Monitored Input 2
500mA, 24V Monitored Output
Loop 1
Loop 2
Loop 3
Loop 4
A-Bus power supply
FAT/FBF Fault Tolerant Network
IFAM FAT/FBF PCB
Pager/DECT Communicator
RS485
RS485
RS232
Main 2-Loop PCB (incorporates Loops 1 & 2)
2-Loop PCB (incorporates Loops 3 & 4)
PSU Serial Link
EN54/4 PSU (Internal)
Multipath Network PCB
34 way IDC
Multipath Fault Tolerant Network
Indicator / Switch Modules
Control/Display Module
PC Programing Tools (USB connection)
Blank module
Z1-100 Indicator module
20 Zone Indicator module with name slots
40 Zone Indicator module with name slots
20 Zone with name slots and provision for addition of switches and customisable LEDs and / or printer
40 Zone with and provision for addition of switches and customisable LEDs and / or printer
Indicator / Switch Bus
Control
RS232
24v
6 way IDC
Printer Interface / PSU PCB
Printer
Printer mounts in these modules

4 CABLING REQUIREMENTS

All installation wiring must be checked and tested before termination at the panel. Always isolate the panel's Mains and battery backup supplies before cable termination at the panel.

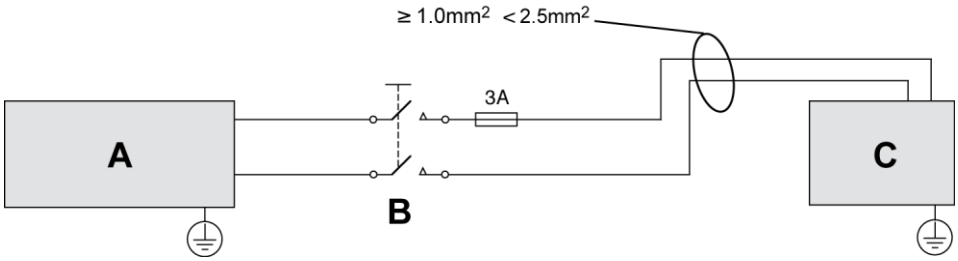
4.1 Mains Wiring

Mains wiring must be installed in accordance with the relevant national, regional or local regulations (in the UK this is the IEE Wiring Regulations BS 7671 and BS 5839 Part 1).

Mains wiring should be fire resistant and segregated from extra low voltage field wiring.

The general requirement for the 230V, 50Hz Mains supply to the ZFP panel is fixed wiring, using 3 core cable (no less than 1mm^2 and no more than 2.5mm^2), or a suitable three conductor system fed from an isolating switched fused spur, fused at 3A. The Mains supply must be exclusive to the panel, secure from unauthorised operation, and be marked 'FIRE ALARM: DO NOT SWITCH OFF'.

HINT. As an alternative to a switched fused spur, a double pole isolating device (B) may be used in the Mains feed from the Main Distribution Board (A) to the ZFP Panel (C), providing it meets the appropriate wiring regulations - see diagram below.



4.2 Field Wiring

Separated or Safety Extra-Low Voltage (SELV) field wiring includes loop circuits, sounder circuits and auxiliary inputs/outputs. SELV field wiring must be installed in accordance with the relevant national, regional or local regulations (in the UK this is the IEE Wiring Regulations BS 7671 and BS 5839 Part 1).

Fire resistant, screened cable should be used throughout the installation. This not only shields the data moving up and down the cables from outside interference but is essential to ensure compliance with EMC regulations. All screens must only be terminated to the earth bar provided in the panel's back box.

Screened cables such as FP 200™, Firetuff™, Firecel™ and MICC may be acceptable provided they meet national standards / the system specification as applicable. Consult Clause 26 of BS 5839 Part 1 for more detailed information on cables, wiring and other interconnections.

4.3 Testing of Field Wiring

Check the continuity of the loops (including screens), loop earth faults, loop crossover faults, the resistance of the conventional sounder circuits and all other field wiring as appropriate to ensure they are free from faults.

DO NOT test wiring with an insulation tester (Megger) with any electronic equipment connected as the 500V test will destroy these devices and invalidate the warranty.

5 INSTALLATION

Note: See section 9.1 for a recommended shortform installation procedure.

5.1 Enclosure Description

The panel's enclosure comprises of a hinged steel lid and a steel back box which houses a power supply unit (PSU) and several printed circuit boards (PCBs) mounted on a metal chassis, as shown in figure 2 below. Space is available inside the back box for the backup batteries.

The panel can be surface or semi-flush wall mounted (a bezel is required for semi-flush mounting). The standard ZBOXS, 2 to 4 loop version enclosure, is shown below.

Figure 2 – Location of Standard 2/4 Loop Version Components

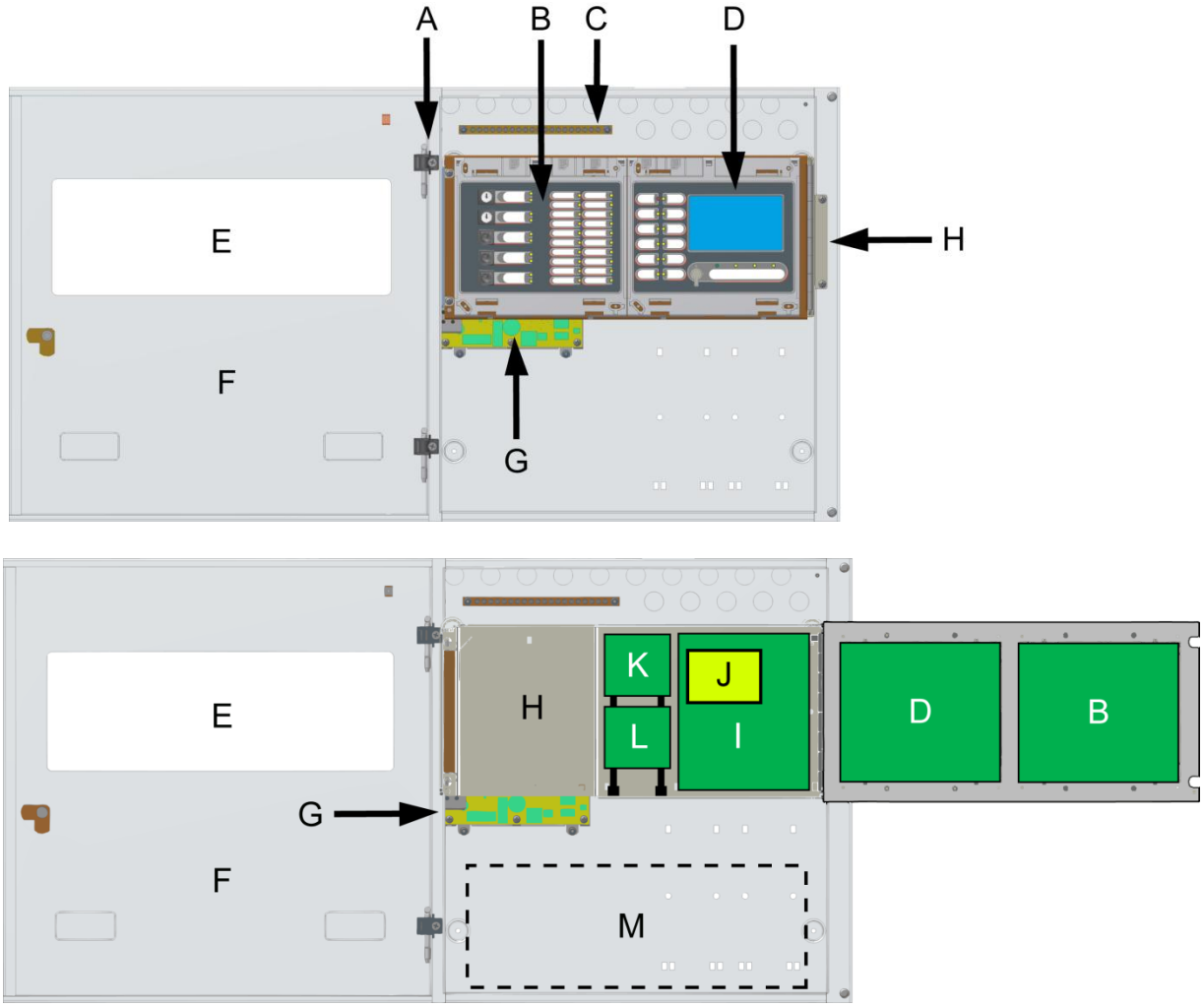


Figure 2 key:

A	Lid Hinge Pins – 2 off	H	PCB Chassis
B	Module (20 zone, 5 switches, 10 LEDs - Z45 Module shown)	I	Main 2-Loop PCB incorporates loops 1 & 2. (Part No. Z02MAIN/X).
C	20-way heavy duty brass earth bar. DO NOT operate equipment without connecting cable screens to this bar.	J	2-Loop PCB incorporates loops 3 & 4. (Part No. Z02LOOP/X). Optional.
D	Control/Display Module (Part No. Z41) incorporates the touchscreen	K	Network Interface PCB (Part No. ZHN or ZSN). Optional.
E	Lid Aperture	L	A-Bus PCB. Optional
F	Lid	M	Space for up to 2 x 12 V 18 Ah batteries
G	PSU		

5.2 Mounting Location

Each panel must wall mounted, indoors and MUST NOT be subjected to conditions that are likely to affect their performance, e.g. damp, extreme temperatures, physical abuse, etc.

They should be sited at an easily accessible height and in a prominent position within the building. The ambient light and sound levels should allow the indicators and touchscreen to be clearly visible and the internal buzzer clearly heard. Typical locations for the panel are in the entrance foyer/hallway at ground floor level (the first and most obvious point of contact for emergency services) or in a permanently manned security office.

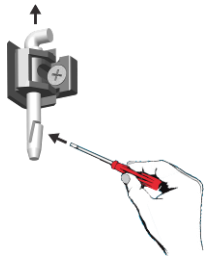
5.3 Removing the Lid, PCB Chassis and PSU

To protect the panel's electronic components from damage and also to expose the back box mounting holes, the panel's lid, PCB chassis and PSU should be removed prior to initial installation. When removed, all panel components should be stored in a clean, dry place which is free from vibration, dust and excessive heat.

HINT. Retaining the components in a suitable cardboard box will also guard them against mechanical damage.

To remove the lid:

- Use the supplied key to unlock the lid.
- Open the lid 180° to the left (do not overbend the hinges), then disconnect the lid's earth strap.
- By hand, or by using a screwdriver, push out the lid's two plastic hinge pins (shown right) and lift off the lid.



To remove the PCB chassis and PSU:

See 'Anti-static handling guidelines' in section 1.2

- Disconnect the earth strap from the PCB chassis. Remove the four retaining screws that secure the PCB chassis in the back box and carefully remove the chassis to expose the PSU.
- Pull the PSU's earth strap off the spade connector at the back box's earth point. Remove the four retaining nuts and washers that secure the PSU in the back box and carefully remove the PSU.

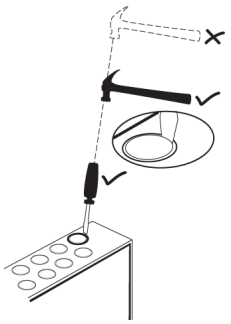
5.4 Planning the Cable Layout in the Panel and Removing Knockouts

Mains wiring should be segregated from extra low voltage field wiring. Leave sufficient tails inside the panel to ensure straightforward connection of wiring to the panel's terminals.

All cables should be fed into the panel through the knockouts provided in the back box.

Knockouts should be removed with a sharp, light tap using a 6mm flat-bladed screwdriver as shown in the diagram (right). Ensure any swarf is removed from the enclosure.

Always ensure if a knockout is removed, the hole is filled with a good quality 20mm cable gland. Any unused knockouts must be securely blanked off.



5.5 Wall Mounting the Back Box

Note: The panel can be surface or semi-flush mounted on a wall (note optional bezels are available for semi-flush mounting).

CAUTION: The enclosures are heavy! Therefore, use suitable screw fixings for wall mounting the enclosures.

Securely fix the panel to a wall using the four (Ø4.7mm) mounting holes provided in the back box. The mounting holes are suitable for use with No.8 roundhead or countersunk screws

See Appendix 1 for enclosure fixing details.

Always assess the condition and construction of the wall and use suitable screw fixings. Any dust or swarf created during the fixing process must be removed from the inside of the back box.

Ensure there is sufficient space to allow the lid to be fitted/removed when the panel is wall mounted.

5.6 Reinstalling the PSU, PCB Chassis and Lid

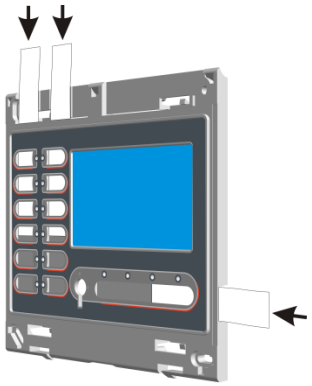
Refit the panel's PSU, PCB chassis and lid by following the removal procedure (section 5.3) in reverse order.

Note that the panel's PSU will have to be refitted and connections made to it before the chassis is refitted. See Connecting Mains – section 5.18 and Connecting the Standby Batteries – section 5.19.

5.7 Inserting the 'slide-in' labels

Insert the slide-in labels (supplied in the accessory pack) for the ancillary modules), as shown right.

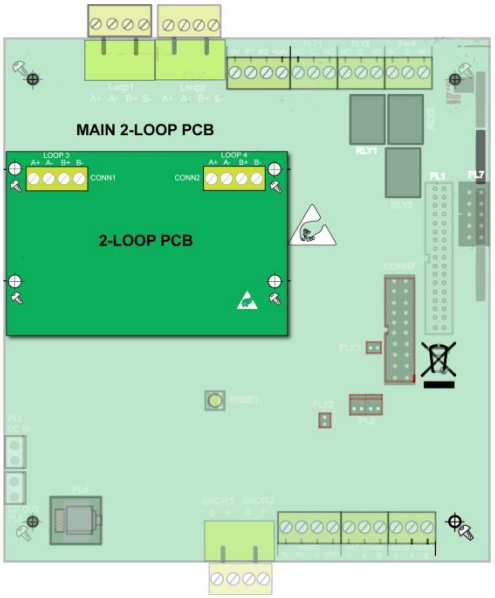
Note: The label inserted for the module's control buttons depends on how the unit has been configured.



5.8 Fitting the 2-Loop PCB (Optional)

An optional 2-Loop PCB (Part No. Z02LOOP/X) provides two additional analogue loop connections (Loop3 & Loop4) if required. With reference to the diagram below:

- Take the 2-Loop PCB and carefully align its holes up with the four mounting holes on the Main 2-Loop PCB.
- Insert the four PCB 'plug-on' pillars (supplied with the 2-Loop PCB) through the holes on the 2-Loop PCB and into the holes on the Main 2-Loop PCB. Push the pillars until they click and lock in position.
- Refer to section 5.11, figure 4 for analogue loop connections.



5.9 Compact Controllers (Optional)

The compact controller is an optional network node that can be used to operate the system with basic functionality. The controller is a loopless device and has the following flush and surface mounted versions:

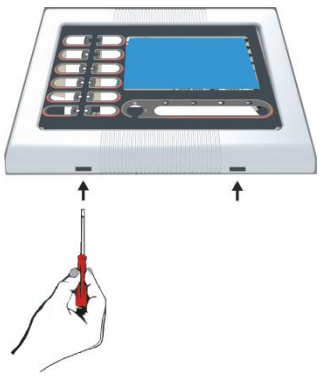
- Controller flush mount - Part No. ZREP1F (used with a multipath network), Part No. ZREP2F (used with a singlepath network).
- Controller surface mount - Part No. ZREP1S (used with a multipath network), Part No. ZREP2S (used with a singlepath network).

Summary of Compact Controller Features

- For controller dimensions and fixing details – see Appendix 1.
- Silence, Reset and Mute buttons are available at the controller's touchscreen.
- Alarms, Faults, Disablements and Tests buttons are available at the controller's touchscreen.
- A controller comes with a network PCB fitted as standard, enabling it to communicate with other nodes (panels or controllers) over a ZFP network. See networking section 6 for details.
- Each controller requires an EN 54-4/A2 boxed PSU (supplied separately). See networking section 6, figures 13 & 14 for PSU connection details.
- A controller has a limited number of touchscreen menus available compared to a panel. These are listed below. Refer to section 9 for menu details.

Access Level 1 menus	Access Level 2 menus	Access Level 3 menus
Access Level 2	Access Level 3	Set Time/Date
Access Level 3	ReSound Sounders	Show System Details
Lamps Test	Alarm Counter	LCD Auto-Dimming
View Alarm Counter	Disablements Functions	Setup Networking
Clean the Display	Set Time/Date	Select Language
		Clean Start
		Backup System Devices
		Restore System Devices

Removing the Compact Controller's Bezel



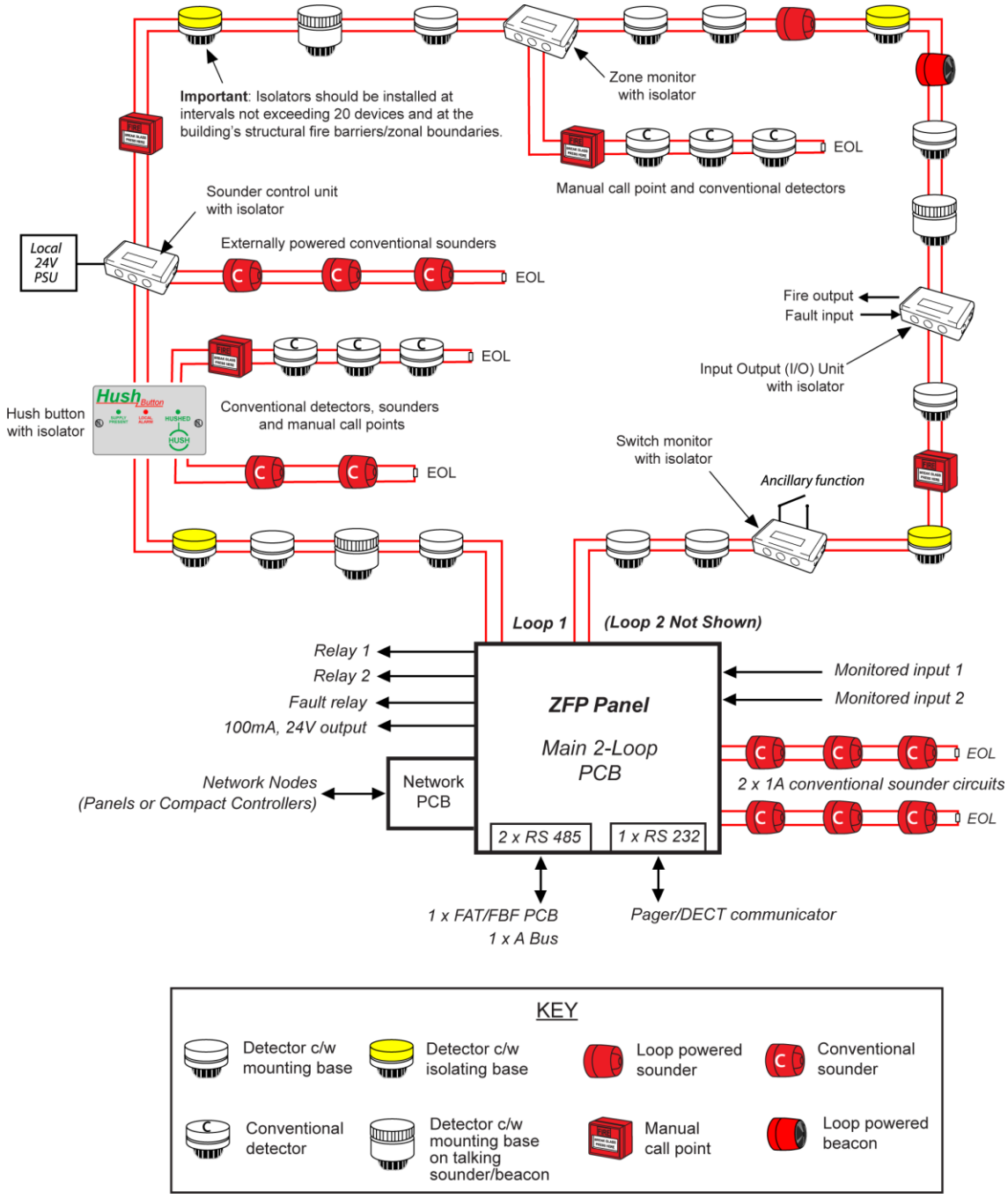
The compact controller's front bezel must be removed to access the unit's internal components and expose the back box mounting holes.

Using a small flat bladed screwdriver, push in the two tabs to release the bezel, as shown left.

5.10 Analogue Addressable Loop Overview

Figure 3 below shows a typical analogue addressable loop complete with detectors, manual call points, loop-powered sounders and ancillary devices. The descriptions and availability of the devices shown below may not be applicable to all manufacturers' protocols – check with your supplier for further details. Also, this example arrangement of devices may not be permitted by design and installation regulations in certain countries. The loop should be connected to the relevant connector block on the panel's Main 2-Loop PCB (Part No. Z02MAIN/X) and its screens terminated at the panel's earth bar as shown in section 5.11, figure 4.

Figure 3 – Typical Analogue Addressable Loop Overview



Important Note: Remember to isolate the panel's Mains and battery backup supplies before terminating wiring at the panel.

5.11 Analogue Addressable Loop(s) Wiring

Two analogue loop connections (Loop1 & Loop2) are available on the Main 2-Loop PCB, as shown in figure 4 below. The maximum output current per loop is 500mA and plug-on 5mm connectors accept up to 2.5mm^2 cable. An optional 2-Loop PCB provides two additional analogue loop connections (Loop3 & Loop4) if required.

The loop's earth screens should be adequately insulated and ONLY terminated at the earth bar in the back box to ensure earth continuity. Check for loop earth faults and loop crossover faults.

The back box earth bar is provided for terminating earth screens or drains and is NOT the panel's main earth point. The installer must review the external earth bonding (if required) with respect to the national, regional or local wiring rules. If the installation requires protective earth bonding, then this must be applied externally and in conjunction with the type of earth system employed on site.

Figure 4 – Analogue Addressable Loop Connections

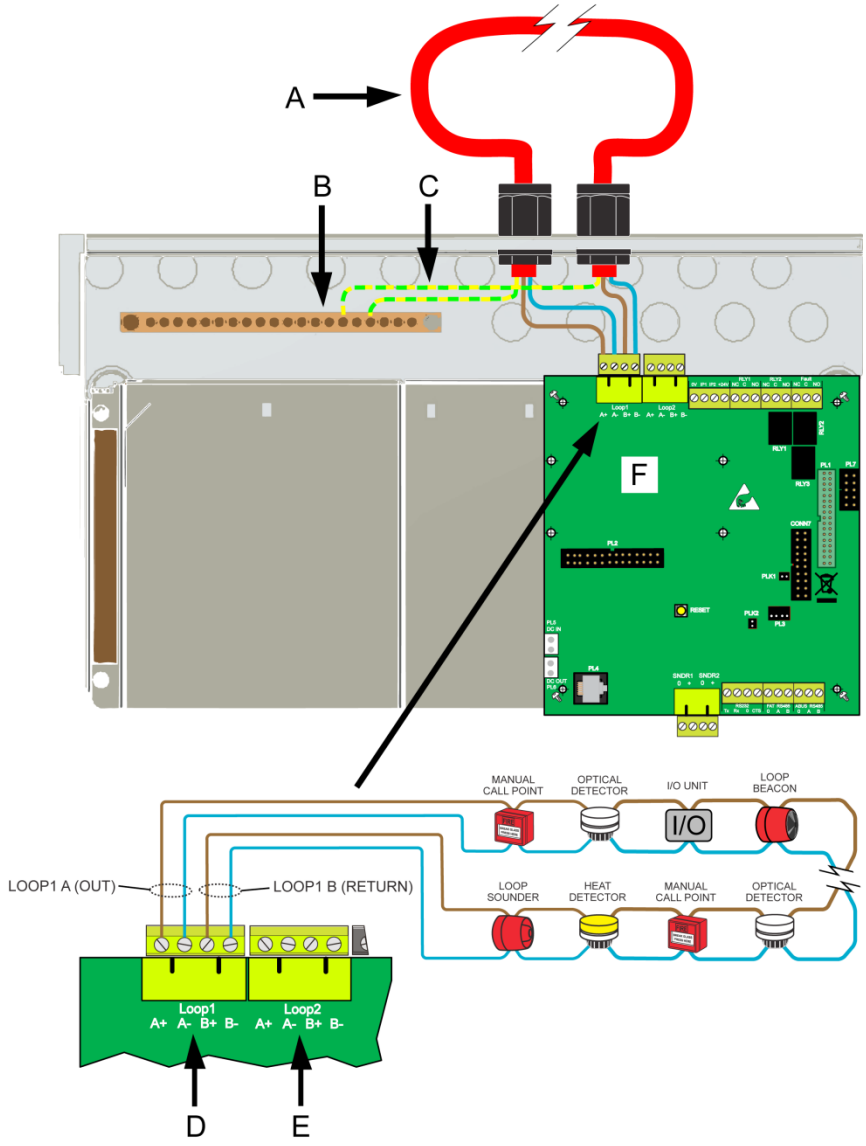


Figure 4 key:

A	Analogue Loop 1 Cable (fire resistant)	D	Analogue Loop 1 Connector (A+, A-, B+, B-). Plug-on connector type.
B	20-way heavy duty brass earth bar. DO NOT operate the equipment without connecting cable screens to this bar.	E	Additional Analogue Loop 2 Connector (A+, A-, B+, B-). Plug-on connector type. Wiring not shown in figure 4.
C	Cable Earth Screens	F	Main 2-Loop PCB (Part No. Z02MAIN/X).

5.12 Conventional Sounder Circuit(s) Wiring

Two conventional sounder circuits are provided on the Main 2-Loop PCB, each circuit has a maximum rating of 1A. If a full complement of sounders or bells are to be used, split them equally across both circuits.

Each sounder circuit should be connected to the terminals marked SNDRS1 & SNDR2 as shown in figure 5 below and its earth screens terminated at the back box earth bar. Plug-on 5mm connectors are provided that accept up to 2.5mm^2 cable.

Note: ALWAYS make sure the two 6k8 EOL resistors (supplied) are fitted at the last sounder on each circuit to allow the wiring to be monitored for open and short circuit faults. If a sounder circuit is unused, you must still connect the resistor at the panel terminals.

Figure 5 – Conventional Sounder Circuit Connections

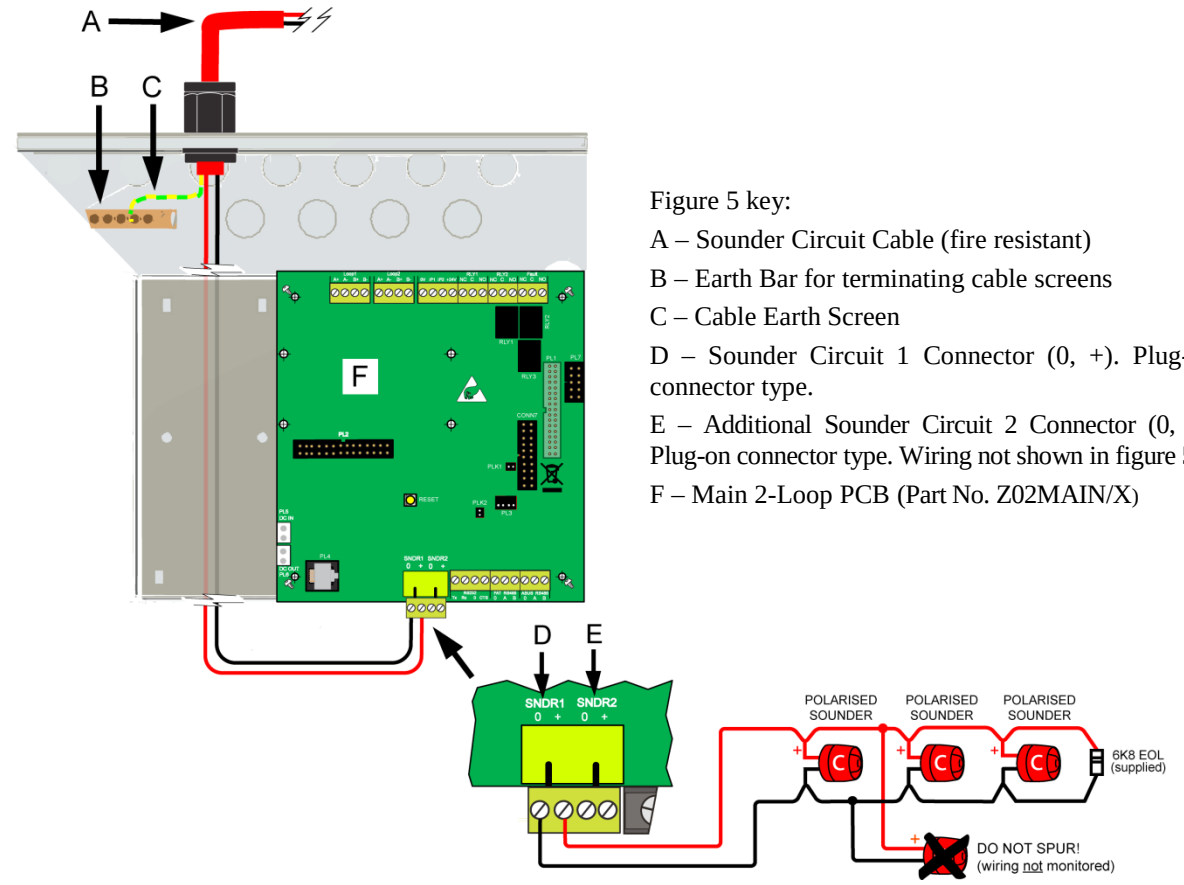


Figure 5 key:

A – Sounder Circuit Cable (fire resistant)

B – Earth Bar for terminating cable screens

C – Cable Earth Screen

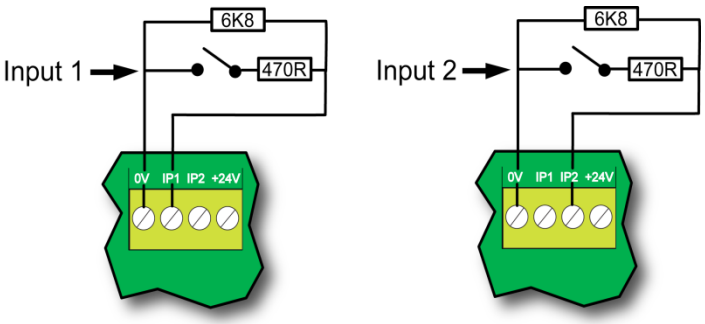
D – Sounder Circuit 1 Connector (0, +). Plug-on connector type.

E – Additional Sounder Circuit 2 Connector (0, +). Plug-on connector type. Wiring not shown in figure 5.

F – Main 2-Loop PCB (Part No. Z02MAIN/X)

5.13 Auxillary Input Wiring

Figure 6 – Auxiliary Input Connections



Two programmable auxiliary input connections are provided on the Main 2-Loop PCB.

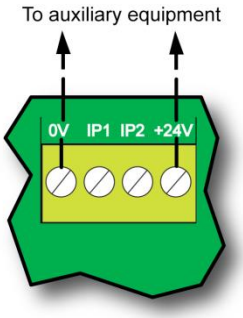
The wiring for each input should be connected to the terminal block marked IP1 & IP2 with a 470R 0.25W trigger resistor (supplied) in each leg, as shown in figure 6 left.

If required, input wiring screens can be terminated at the earth bar in the same way as the analogue loop earth screens.

Note: ALWAYS make sure the two 6k8 EOL resistors (supplied) are fitted at the last device on each input to allow the wiring to be monitored for open and short circuit faults. If an input is unused, you must still connect the resistor at the panel terminals.

5.14 24V Auxiliary Power Output

Figure 7 – 24V Auxiliary Output Connections



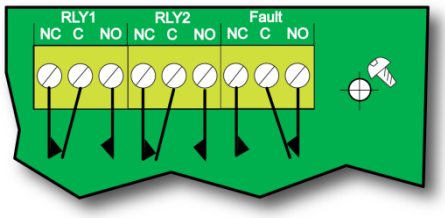
One fused 24Vdc output, rated at 100mA, is provided on the Main 2-Loop PCB and can be used for supplying power to ancillary fire alarm equipment, e.g. relays. The output wiring should be connected to the terminal block marked +24V, as shown in figure 7 left.

5.15 Relay Output Wiring

Three volt-free relay output connections are provided on the Main 2-Loop PCB - a failsafe fault output, which switches under any fault condition or total power failure, and two programmable auxiliary relay outputs. All three relays are capable of switching 1A @ 30Vdc.

DO NOT use these relays for switching Mains voltages.

Figure 8 – Relay Output Detail



The two auxiliary outputs can be programmed using the panel's PC Tools to operate as required but their default operations are:

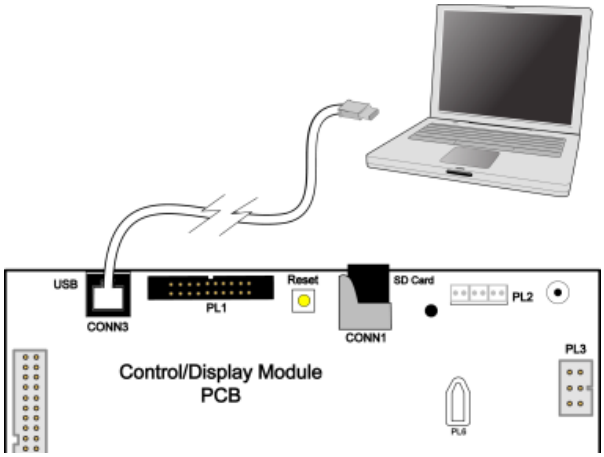
RLY1: Switches when any zone goes into fire; switches back when the panel is silenced.

RLY2: Switches when any zone goes into fire; switches back when the panel is reset.

The wiring for each output should be connected to the relevant connector block on the Main 2-Loop PCB, as shown in figure 8 above.

5.16 Remote PC Connection

Figure 9 – PC Connection



A 'galvanically - isolated' USB connector (CONN3) is provided on the Control/Display Module PCB for the connection of a Windows based PC, running programming software.

The recommended cable is a USB Type A male connector to USB Type B male connector.

ZFP PC Tools are available that allow quick and easy input of data, cause and effect programming, device and zone naming.

5.17 Printer Connection

A socket (PL3) is provided on the Control/Display Module PCB for the optional connection of an integral serial printer to allow printing of the panel's event and alarm log.

5.18 Connecting Mains

THE PSU IS CLASS 1 EQUIPMENT AND MUST BE EARTHED.

The panel's EN 54-4 PSU (Part No. BF362-5E or BF362-3E) is a Mains (230V, 50Hz) to regulated dc PSU providing either 5A or 3A @ 24Vdc. Combining the functions of a PSU, battery charging unit and battery monitoring unit, it is fully compliant with EN 54-4:1997 + A1:2002 + A2.

Remove the protective cover of the PSU and feed the Mains cable through the PSU's 20mm grommet. Terminate the Mains cable at the power supply's PCB connector block CONN1 (see figure 10 below). After terminating, refit and secure the cover.

DO NOT ATTEMPT TO CONNECT MAINS SUPPLY TO THE PSU UNTIL THE INSTALLATION IS COMPLETE AND THE PANEL IS READY TO BE TESTED.

Figure 10 – 5A PSU Layout and Mains Connection Details (with protective cover removed)

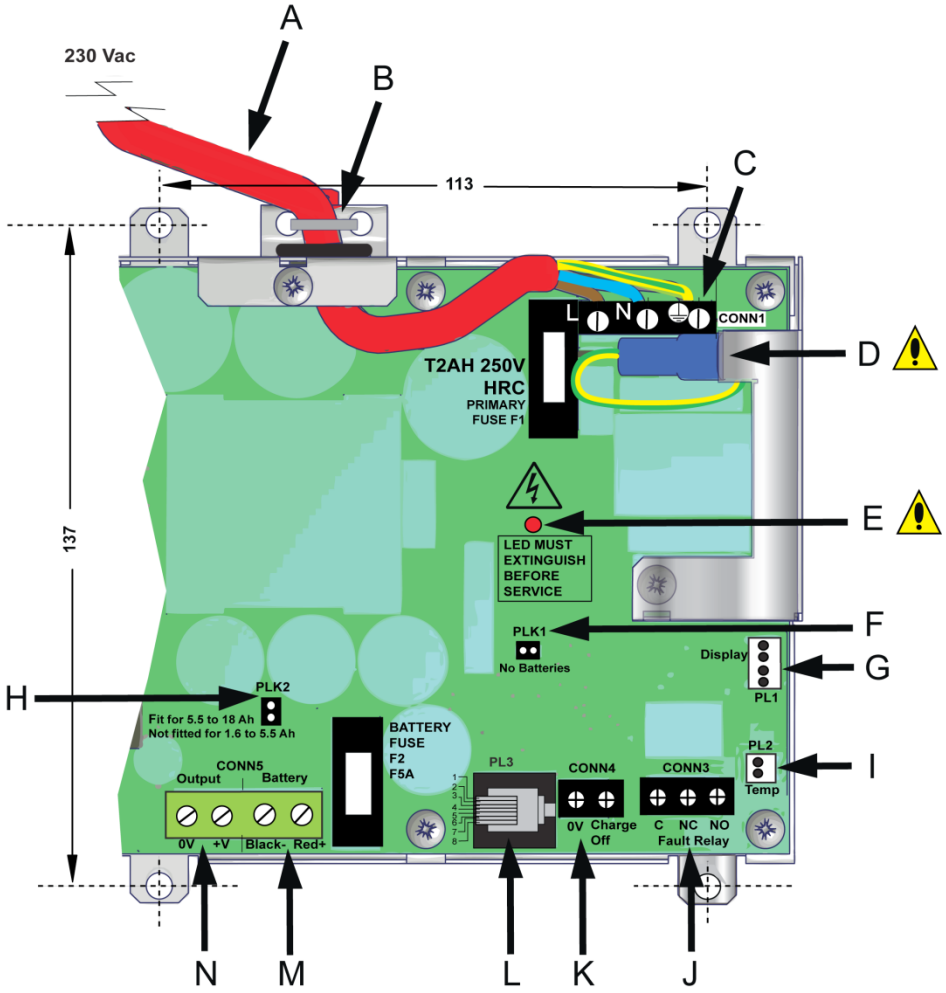


Figure 10 key:

A	**Mains Cable** Must be fire resistant, segregated from extra low voltage cables, and fed through the PSU's grommet.	H	**Battery Charge Link (PLK2)** Fitted for 7Ah to 18Ah (1A charge)
B	**Cable Tie** For cable management purposes, secure incoming cable using supplied tie.	I	Not used
C	**Mains Connector (CONN1)** L=Live, N=Neutral, ⏚ =Earth.	J	**Fault Relay (CONN3)**
D	**PSU Earth Strap** DO NOT operate equipment without connecting this strap as shown above.	K	**Charge Off Input (CONN4)**
E	**Hazardous Voltage Present LED** When lit red, hazardous voltages are present on the components and copper under the PSU's cover. DO NOT TOUCH UNTIL EXTINGUISHED!	L	**OEM Equipment Connector (PL3)** Connects to PL4 on Main 2-Loop PCB.
F	**Battery Monitoring Link (PLK1).** Link must NOT be permanently fitted.	M	**Battery Input (CONN5)** See section 5.19.
G	Not used	N	**Supply Output (CONN5)**

5.19 Connecting the Standby Batteries

CAUTION: There is a risk of explosion if an incorrect battery type is used. Always dispose of used batteries in accordance with the battery manufacturers' instructions.

Do not make the final battery connections until the installation wiring is complete and the panel is ready to be tested. One method of isolating battery power is to disconnect the battery link wire.

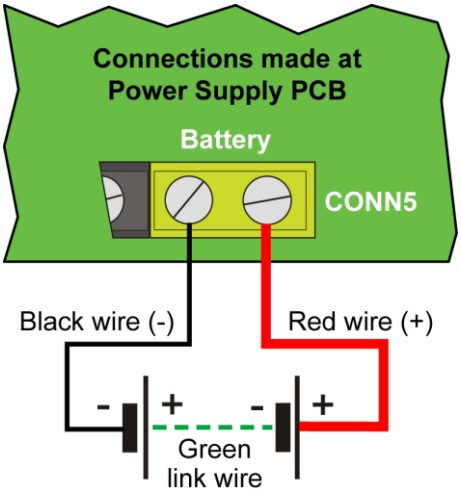
Two new, good quality and fully charged 12V valve regulated lead acid (VRLA) batteries are required as the emergency stand-by power supply for the panel.

The batteries should be connected in series and located in the bottom of the panel's enclosure, as shown in figure 11 below. Connect the 'Red' (+ve) and 'Black' (-ve) battery wires from the battery terminals to connector block CONN5 on the power supply's PCB. The (red and black) battery wires, (green) link wire and nylon cable ties are supplied in the panel's accessory pack. Secure the batteries into position using the cable ties.

The panel's sophisticated battery monitoring unit protects the batteries against deep discharge by activating a cut off circuit when the stand-by supply voltage reaches 21V approx. If batteries are not fitted, are discharged or in poor condition, a PSU fault will show at the panel.

The capacity of the batteries used will depend upon the required stand-by time. To calculate the batteries required for any given stand-by period, see the battery calculation guide in Appendix 5.

Figure 11 – Battery Connection Details



CAUTION! Inferior and New Batteries stored over 6 months.

The panel's PSU is an EN 54-4/A2 power supply and as such measures accurately the internal battery resistance down to a fraction of an ohm. The fault threshold is a function of EN 54-4 and as such cannot be changed, otherwise, it would NOT be a certifiable power supply. Batteries stored for long periods of time before use (especially new ones!), suffer a progressive degradation of internal resistance the longer they are kept off charge after manufacture. Contrary to popular opinion they DO NOT recover this degradation once re-charged. In order for the battery to recover it MUST be discharged and charged several times (more than once), each time you will see a reduction in the internal resistance.

Therefore, if you install one of these batteries AND it shows a fault AND you just leave it AND expect the fault to go away, it will not! In this instance it is not the charger at fault, it is the battery.

6 MULTIPATH & SINGLEPATH NETWORKING (Optional)

The ZFP's network protocol allows the interconnection of up to 128 ZFP panels and compact controllers over a two-wire RS485 network. A ZFP network can either be a high integrity multipath network, or a standard singlepath network.

To communicate over a network, each network node (panel or compact controller) requires an RS485 network interface PCB. Compact controllers come with a network interface PCB fitted as standard.

6.1 Summary of Network Features

Feature	Multipath network	Singlepath network
Network interface PCB Part No. (one required per panel)	ZHN	ZSN
Maximum number of network nodes	128 (max. 64 x 8 loop panels)	8
Maximum cable length between nodes	1km	-
Maximum cable length of network	128km	1km
Network protocol	RS485	
Network topology	Ring configuration	Daisy-chain configuration
Network wiring	2 core screened cable, fire resistant (minimum size 1mm^2)	
Fault tolerant network (with a single wiring fault)	√	×
Accept Events (Fires, Faults, Disablements, Tests) over the network	√	
Accept Actions (Silence Sounders, ReSound Sounders, Reset Panel) over the network	√	
Share Zones, Input Groups, Output Groups, etc. over the network	√	
PC Tools available for programming Cause and Effects and site information over the network	√	

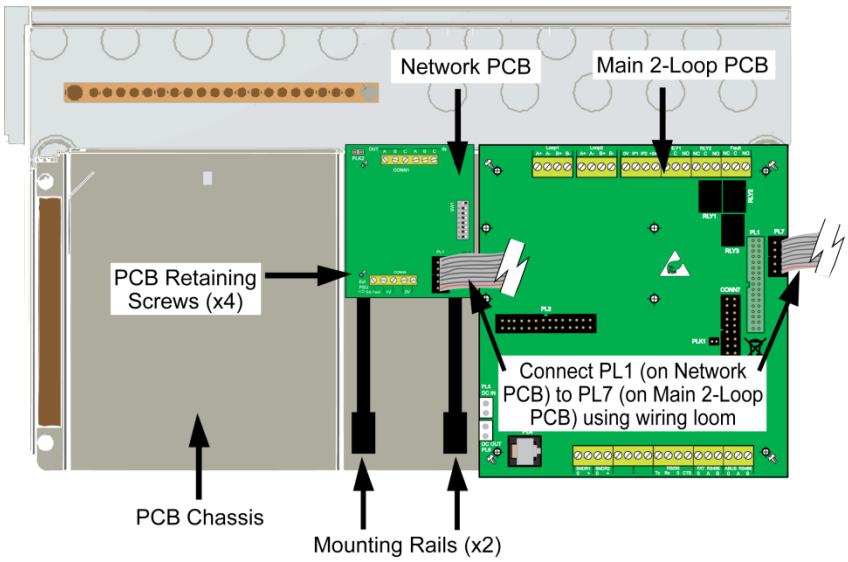
6.2 Fitting the Network Interface PCB

A panel requires a network interface PCB fitting, whilst compact controllers include one fitted as standard.

Important Note: Before installing the PCB, isolate the Mains supply and disconnect the panel's battery back-up supply.

- Fit the network interface PCB as shown in figure 12 below. Items supplied with the PCB include 2 x plastic mounting rails, 4 x retaining screws and a 10-way wiring loom (ZLOOM4).

Figure 12 – Fitting the Network Interface PCB


Network PCB
Main 2-Loop PCB
PCB Retaining Screws (x4)
Connect PL1 (on Network PCB) to PL7 (on Main 2-Loop PCB) using wiring loom
PCB Chassis
Mounting Rails (x2)

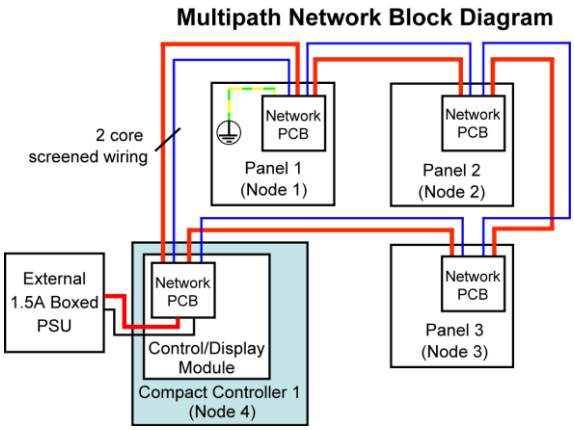
6.3 Multipath Network Wiring

The network wiring should be installed in accordance with the relevant national, regional or local regulations (in the UK this is BS 7671 IEE Wiring Regulations and BS 5839 Part 1). See Cabling Requirements, section 4.

Nodes are connected on a ring circuit using 2 core, fire resistant, screened cable (minimum size 1mm^2).

From node to node, connect A (IN) to A (OUT), B (IN) to B (OUT) and C (IN) to C (OUT) on the multipath network PCB's connector CONN1. Note that terminals A and B are for data comms and terminal C is for earth screens.

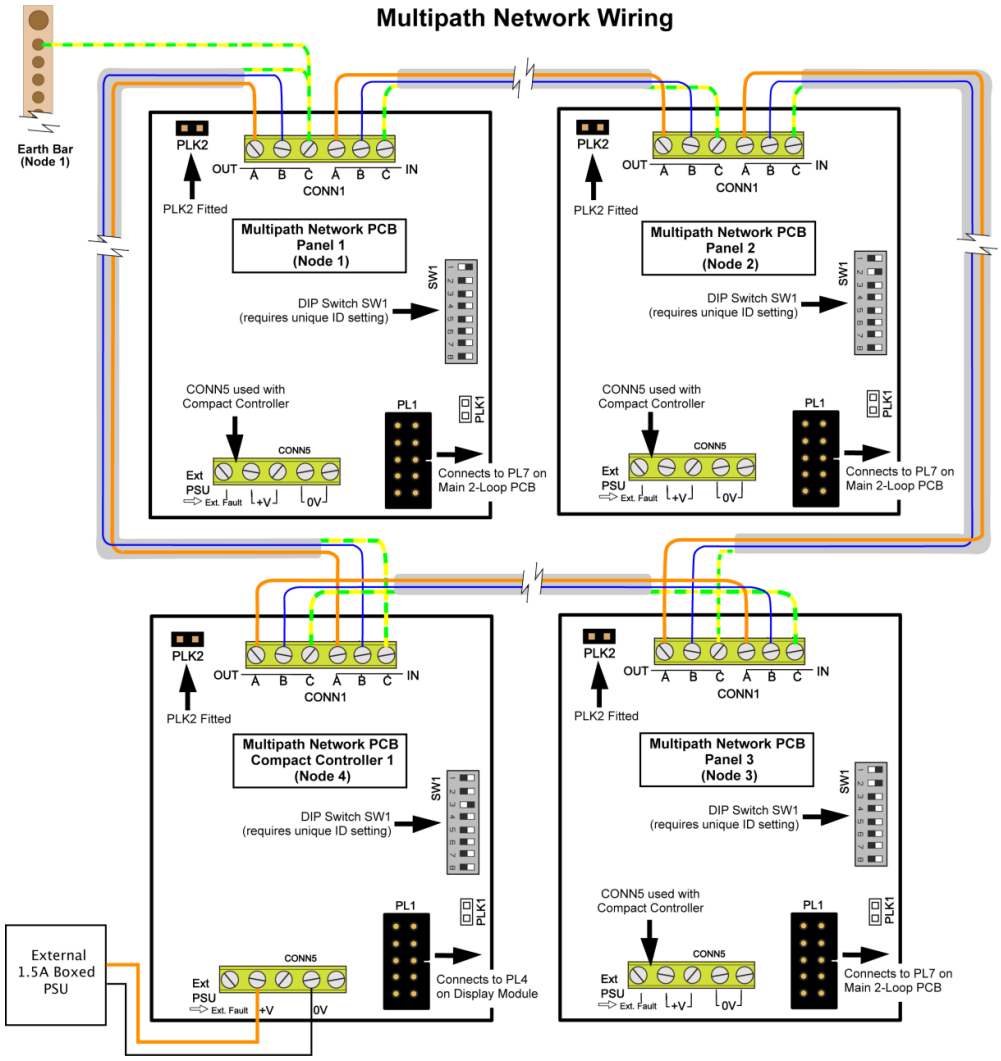
At one networked panel only, terminate the earth screen to the panel's earth bar. This earth bar must also be connected to terminal C (OUT) at this panel. Panel 1 (Node 1) is shown connected to earth in the diagrams as an example.



PLK2 is the RS485 termination link and is fitted at every node on the network. Each segment of the cable is in effect its own RS485 network.

Each networked node (panel or compact controller) requires a unique ID number (1 up to 128) setting using the DIP switch (SW1) on the multipath network PCB. The same unique ID number also needs to be assigned at each individual node using the Setup Networking menu option at access level 3 (see 'Assigning ID Addresses at Access Level 3', section 6.5).

Figure 13 – Multipath Network Wiring



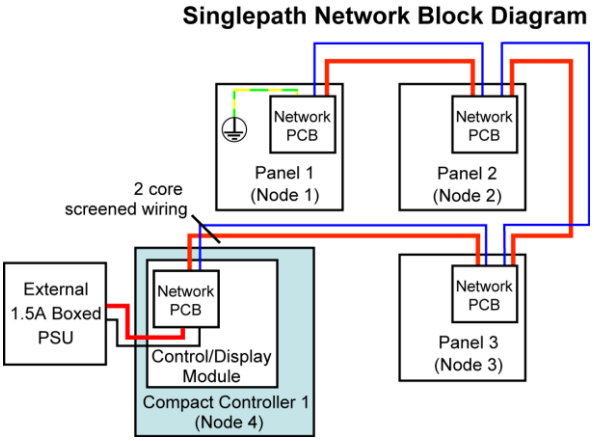
6.4 Singlepath Network Wiring

The network wiring should be installed in accordance with the relevant national, regional or local regulations (in the UK this is BS 7671 IEE Wiring Regulations and BS 5839 Part 1). See Cabling Requirements, section 4.

Nodes are connected in a daisy-chain configuration using 2 core, fire resistant, screened cable (min. 1mm^2).

From node to node, connect A (OUT) to A (OUT), B (OUT) to B (OUT) and C (OUT) to C (OUT) on the singlepath network PCB's connector CONN1. Note that terminals A and B are for data comms and terminal C is for earth screens.

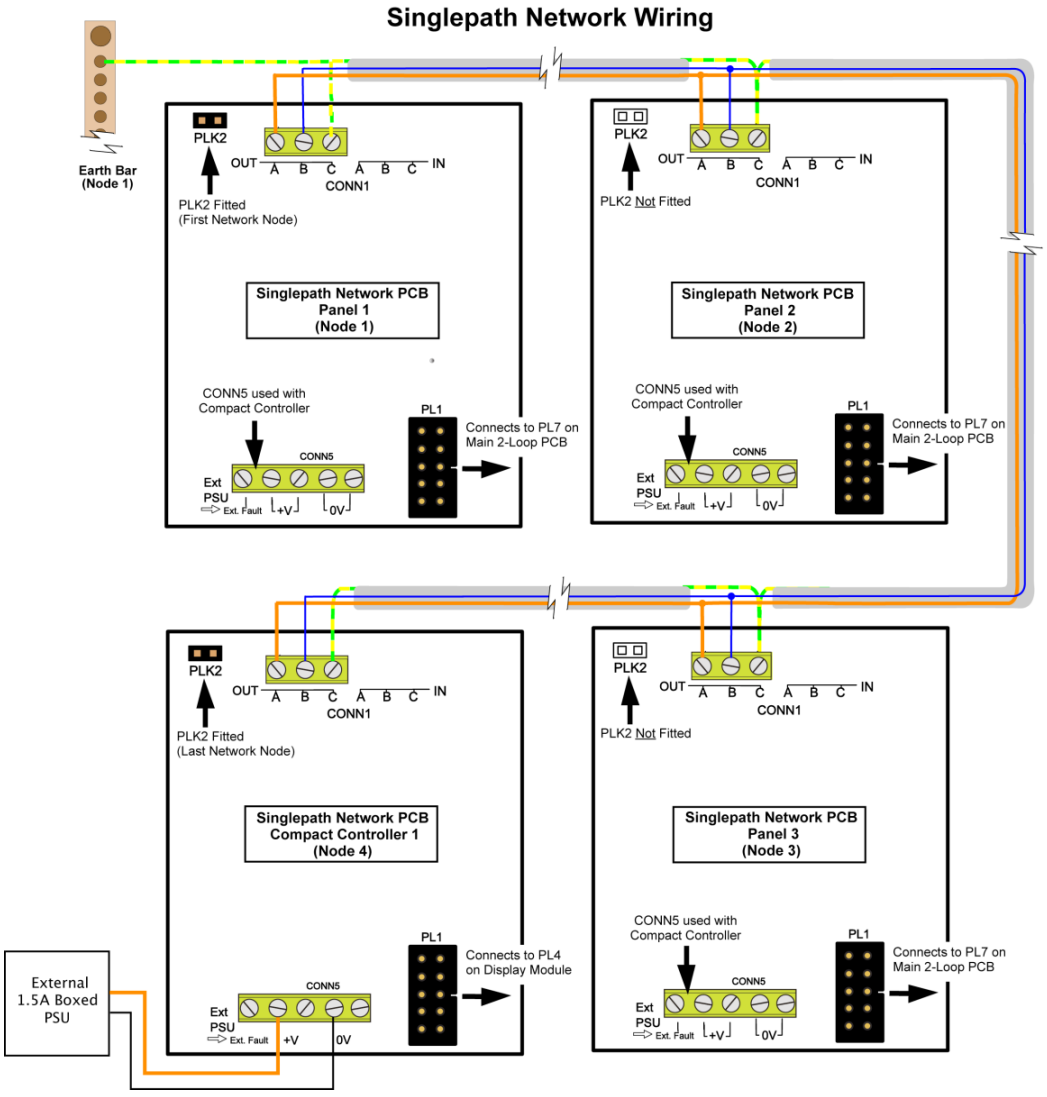
At one networked panel only, terminate the earth screen to the panel's earth bar. This earth bar must also be connected to terminal C (OUT) at this panel. Panel 1 (Node 1) is shown connected to earth in the diagrams as an example.



PLK2 is the RS485 termination link and is only fitted at the first and last node on the network.

Each networked node (panel or compact controller) requires a unique ID number (1 up to 8) assigning at each individual node using the Setup Networking menu option at access level 3 (see 'Assigning ID Addresses at Access Level 3', section 6.5).

Figure 14 – Singlepath Network Wiring

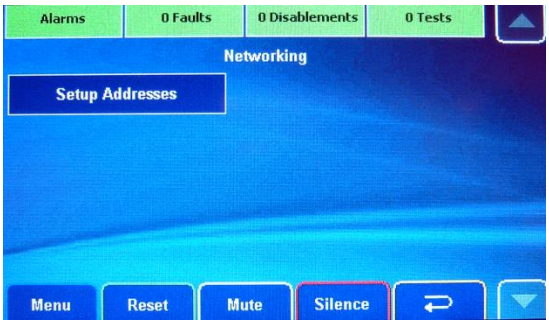

Singlepath Network Wiring
Earth Bar (Node 1)
PLK2
OUT A B C A B C IN
CONN1
PLK2 Fitted (First Network Node)
Singlepath Network PCB Panel 1 (Node 1)
CONN5 used with Compact Controller
CONN5
Ext PSU
Ext. Fault +V 0V
PL1
Connects to PL7 on Main 2-Loop PCB
PLK2 Not Fitted
Singlepath Network PCB Panel 2 (Node 2)
PLK2 Fitted (Last Network Node)
Singlepath Network PCB Compact Controller 1 (Node 4)
Connects to PL4 on Display Module
Singlepath Network PCB Panel 3 (Node 3)
External 1.5A Boxed PSU

6.5 Assigning ID Addresses at Access Level 3

At each network node (normally a panel) in turn, at the node's LCD touchscreen, enter:

Access Level 3 > Commissioning Functions > Setup Networking. The window shown below left appears.

Press the Setup Addresses button and the window shown below right appears.



*The **Segment** field relates to a batch of panel addresses. Segment 000 (displayed by default) denotes a non-network system, Segment 001, 002, 003, etc. denote separate segments of a networked system.*

*The **Address** field is the node's unique ID address within a networked system and is split up into segment and node (within segment addresses).*

For example, in a multipath system, you may have up to 64 networked nodes (addresses 001 to 064) in Segment 001 and another 64 networked nodes (addresses 065 to 128) in Segment 002.

- Enter the segment number in the Segment field using the touchscreen's keypad, e.g. 001.
- Enter the node's unique ID number in the Address field using the touchscreen's keypad, e.g. 001, 002, 003, etc. For multipath systems, ensure this is the same ID that has been set using the DIP switch (SW1) in that particular panel.
- Press the button to confirm and exit.
- Repeat this procedure for all other networked nodes.

7 A-BUS (Optional)

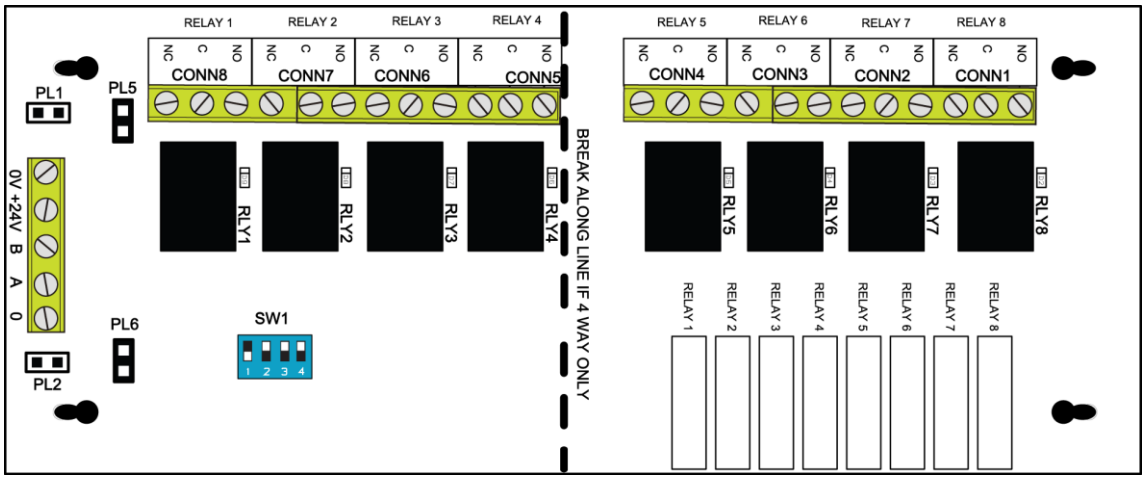
A-Bus enhances the functionality of the ZFP system by connecting peripheral PCBs which provide additional I/O and relay outputs.

The A-Bus RS485 network protocol allows the interconnection of up to 15 A-Bus PCBs per Main 2-Loop PCB using a 2 core screened cable (plus 2 core for power). A-Bus PCBs are normally installed within a ZFP panel but can also work up to a distance of 1 km for non-EN 54-2 functions. Two A-Bus PCB sizes are available; full and half size. If required, a full size PCB can be scored in the middle to produce a half size PCB.

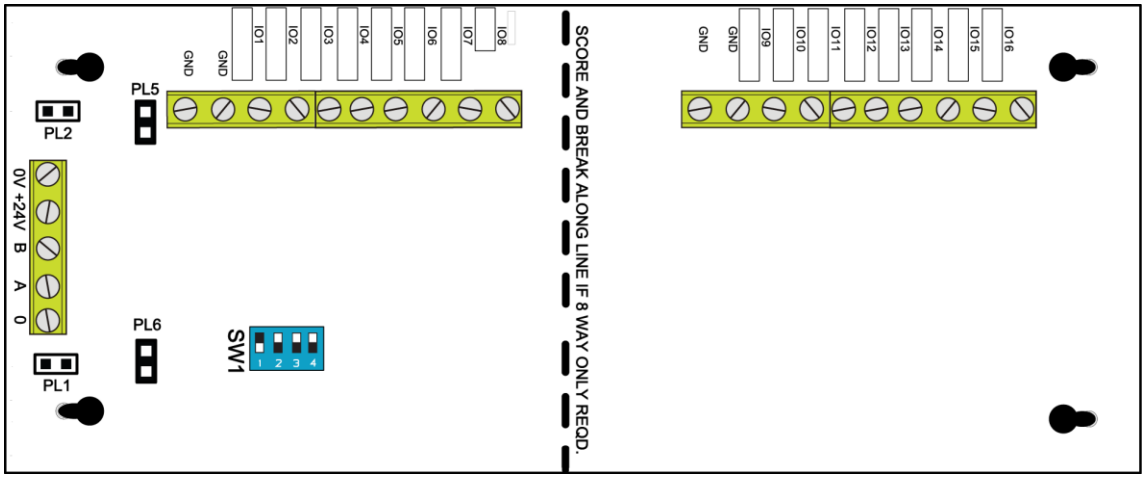
Programming A-Bus PCBs, using ZFP PC Tools, is detailed in the A-Bus Set Document No. DFU5000505.

7.1 Summary of A-Bus Features

A-Bus Feature	Details
Peripheral PCBs	4-way Relay PCB (half size). Part No. Z11. 8-way Relay PCB (full size). Part No. Z12. 8-way Digital I/O PCB (half size). Part No. Z13. 16-way Digital I/O PCB (full size). Part No. Z14.
Cabling	2 core screened cable (plus 2 core for power).
Protocol	RS485. 19200 BAUD, 8 Data, no Parity, 1 stop bit.
Installation	PCBs normally installed within a ZFP panel but may be extended up to 1 km for non-EN 54-2 functions.
Number of PCBs	Connect up to 15 A-Bus PCBs per Main 2-Loop PCB.
PCB sizes (mm)	Half size: 80w x 70h x 30d. Full size: 80w x 150h x 30d.
Powered from	Main 2-Loop PCB or an EN 54-4/A2 PSU.
Common features	• 24V supply inputs. • ABUS RS485 connections provided on the Main 2-Loop PCB. • 15 available addresses (set using 4-way DIP switch SW1). • Isolated RS485 multi drop. • LED indication for polling and power. • Standard connectors (5mm fixed PCB connectors).
Relay PCB features (8-way PCB shown below)	• Common features (as above). • 1A 30V single pole contacts. • Full size PCB can be scored in the middle to produce a half size PCB. • Full size provides 8-way option; half size provides 4-way option. • Each relay is programmable using ZFP PC Tools (see DFU5000505). • Separate LED provided for each relay.



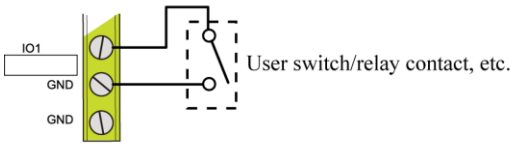
A-Bus Feature	Details
Digital I/O PCB features (16-way PCB shown below)	• Common features (as above). • Open collector outputs (100mA sink). • Full size PCB can be scored in the middle to produce a half size PCB. • Full size provides 16-way option; half size provides 8-way option. • Each I/O is programmable using ZFP PC Tools (see DFU5000505). • 1 LED for any input; 1 LED for any output.



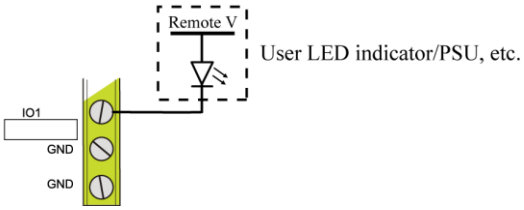
Digital I/O Terminations

Note: I/O1 is shown as an example below, other I/O wired similarly.

- Used as an input.
- Active when switched to GND.



- Used as an output.
- Open collector output connections.



7.2 Fitting and Wiring A-Bus PCBs

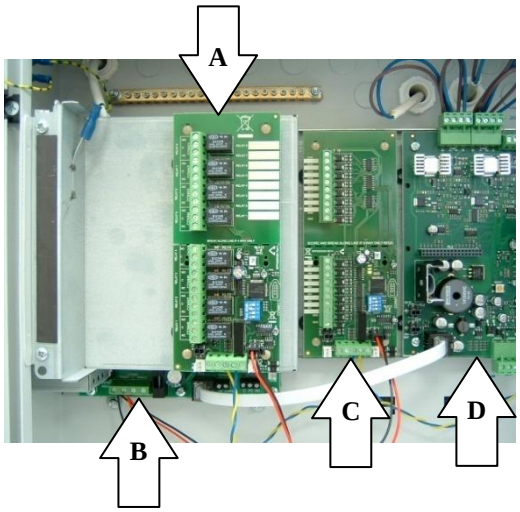
Important Note: Before installing the PCBs, isolate the Mains supply and disconnect the panel's battery back-up supply.

Fit and wire the A-Bus PCBs as shown in the examples below. Items supplied with the PCB include plastic mounting rails and retaining screws. Each A-Bus PCB requires a unique ID number (1 up to 15) setting using DIP switch (SW1) on the PCB.

Stepped Chassis Layout Example

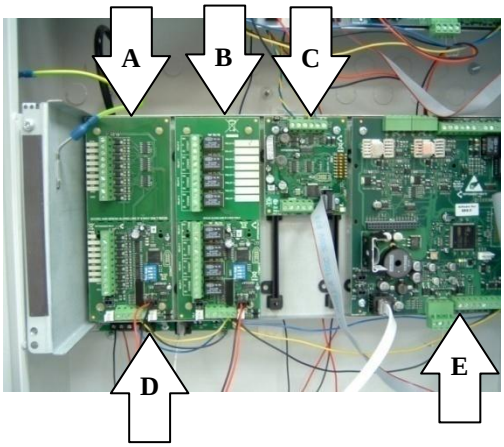
A 8-way Relay PCB (mounted on step)
B Internal PSU (mounted behind step)
C 16-way Digital I/O PCB
D Main 2-Loop PCB

Note that an A-Bus PCB cannot be mounted on a step if a printer module is fitted on the same stepped chassis.



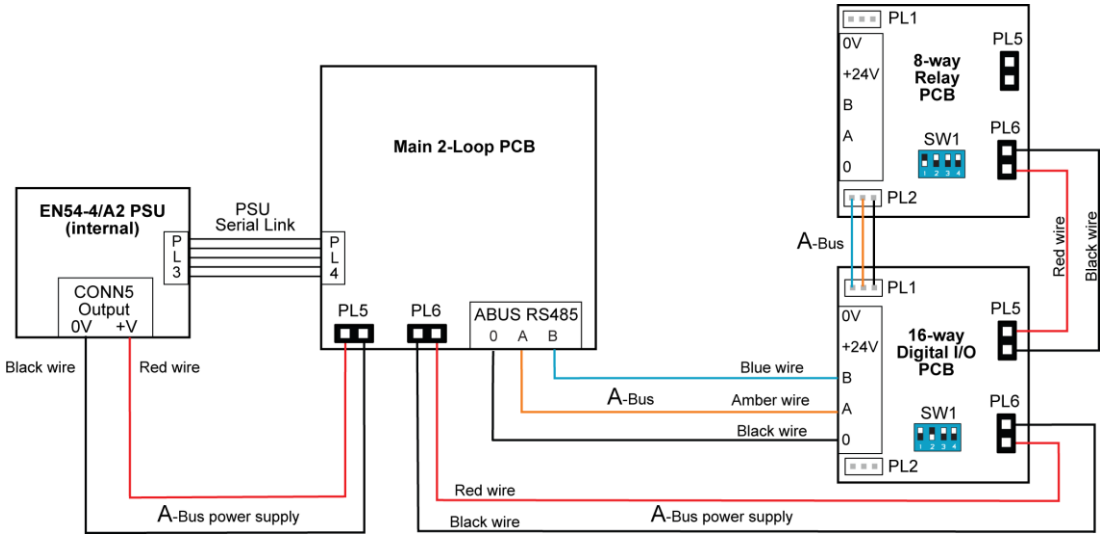
Flat Chassis Layout Example

A 16-way Digital I/O PCB
B 8-way Relay PCB
C Network Interface PCB
D Internal PSU (mounted under chassis)
E Main 2-Loop PCB



Recommended A-Bus Wiring

A-Bus wiring should be installed in accordance with the relevant national, regional or local regulations (in the UK this is BS 7671 IEE Wiring Regulations and BS 5839 Part 1). See Cabling Requirements, section 4. Note that alternative power supply connections, to the one shown below, are available on the A-Bus PCBs.



8 TOUCHSCREEN, INDICATORS & CONTROLS

Note that information on the panel's touchscreen, indicators and controls can be found in the separate User Manual (Document No. DFU5000501).

9 COMMISSIONING & PROGRAMMING

9.1 Recommended Shortform Installation & Commissioning Procedure

Note: DO NOT connect Mains or battery power to the panel until the installation is complete, i.e. panel PCBs are fitted and field wiring has been tested and connected to the panel.

- Remove the panel's lid, chassis and PSU.
- Fit the panel's back box to a wall.
- Gland field cables to the panel and terminate all screens to the earth bar in the back box.
- Test field cables and ensure they are fault-free, i.e. check continuity of cable runs (including screens).
- Refit the panel's PSU.
- Connect external Mains cable to the panel (with Mains isolated) – see section 5.18.
- Connect panel's internal batteries (with battery supply isolated) – see section 5.19.
- Refit the panel's chassis and lid.
- Connect analogue loop(s) wiring to the panel – see section 5.11.
- Connect conventional sounder circuit(s) to the panel – see section 5.12.
- Connect additional field wiring to the panel – see sections 5.13 to 5.15.
- Apply Mains and battery supply to power up the panel.
- Investigate and rectify any messages reported as faults on the panel's touchscreen.

The panel is now ready to be programmed.

Hint: ZFP PC Programming Tools (Part No. ZTOOLS) are available that allow quick and easy input of data, cause and effect programming, device and zone naming, etc. Contact your supplier for details.

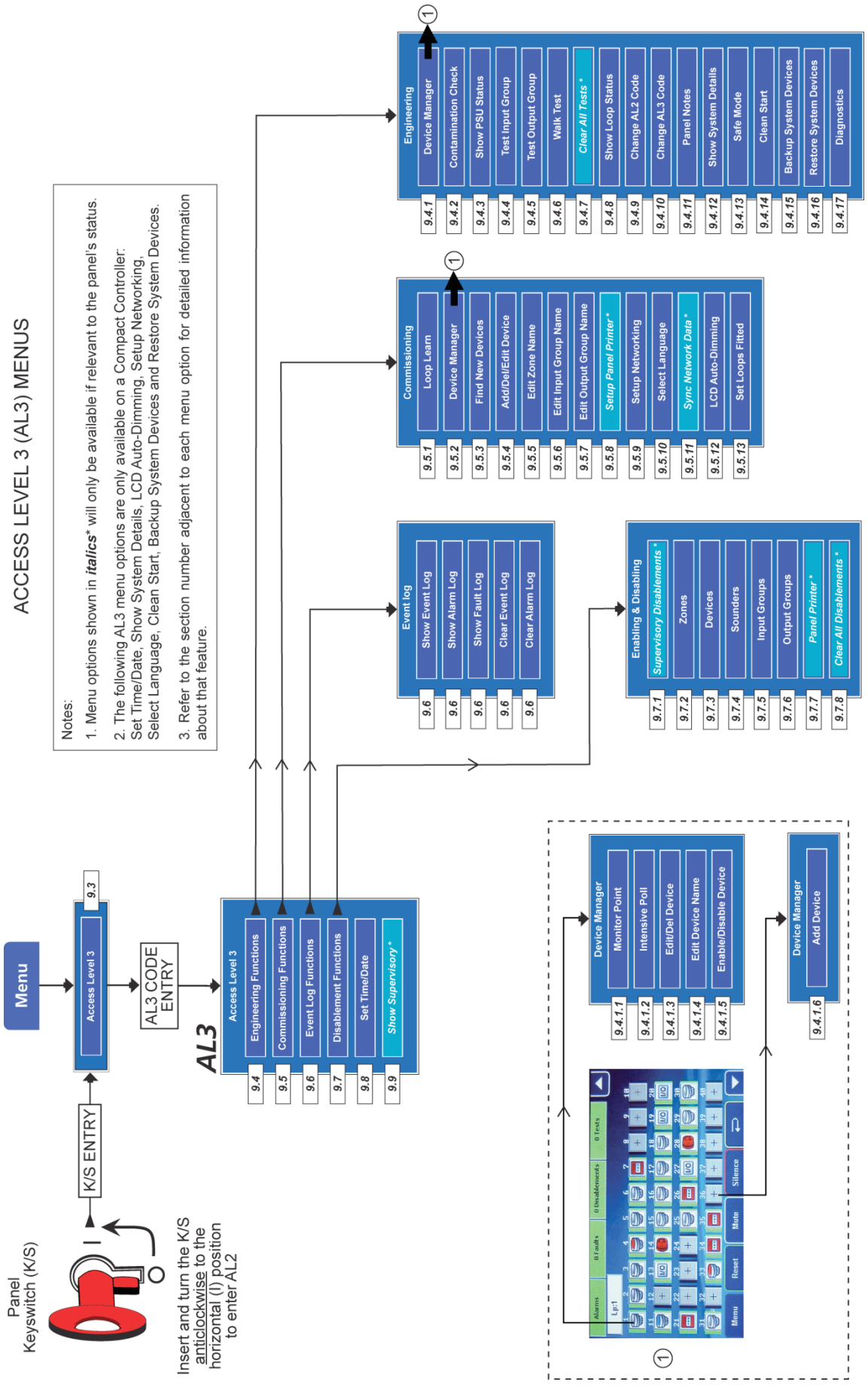
Carry out a loop learn, as detailed in section 9.5.1, and rectify any problems resulting from the loop learn.

When all faults have been cleared, proceed to program the panel as appropriate.

When you are satisfied the panel has been programmed and is working correctly, secure the panel lid and instruct the client/customer in the operation of the system.

Complete and hand over all necessary manuals and other documentation prior to leaving site.

Figure 15 – Access Level 3 Menu Structure



9.2 Access Level 3 Menu Structure

Figure 15 shows the menu options available at access level 3.

Three 'access levels' are available at the panel; general user (access level 1), authorised user (access level 2) and authorised systems engineer (access level 3). This manual focuses on the programming functions available at access level 3 only; access levels 1 & 2 are covered in the separate User Manual (DFU5000501), including information on how fire, fault, disablements and test conditions are reported and dealt with.

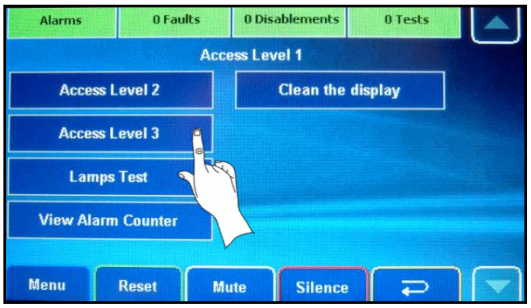
At access level 3, you can:

- View any active fires, faults, disablements or test conditions that are displayed on the touchscreen.
- Gain entry to the panel's access level 2 menu options.
- Gain access to a wide range of engineering functions including loop current, changing the entry codes to access levels 2 and 3 from their factory default settings (see section 9.4).
- Gain access to a wide range of commissioning functions including auto loop learn, edit devices, set up networking and Input/Output Group assignment (see section 9.5).
- Display, filter, print or reset the panel's event and alarm history (see section 9.6).
- Enable or disable zones, sounders, Input Groups, Output Groups and loop devices (see section 9.7).
- Set the panel's time and date (see section 9.8).

9.3 How to Enter Access Level 3 (AL3)

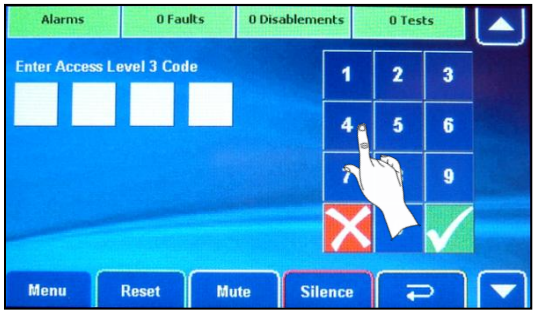
- **Entry to AL3 using the panel's touchscreen**

With the panel operating under normal conditions (shown below left), press the Menu button on the panel's touchscreen to show the access level 1 menu options (shown below right).



Press the Access Level 3 button and the display shown below left appears.

Using the touchscreen's numeric keypad, enter the four-digit access level 3 code. The default code is: **4 4 4 4**. When the code has been entered correctly, the access level 3 menu options are displayed (shown below right). Note that the panel will automatically exit access level 3 after 20 minutes without a button press.



- **Entry to AL3 using the panel's keyswitch and touchscreen**

With the panel operating under normal conditions, turn the panel's keyswitch anticlockwise to the horizontal position to display the access level 2 menu options. As detailed above, press the Access Level 3 button and input the four-digit access level 3 code.

9.4 Engineering Functions

The Engineering Functions menu is used to access the panel's comprehensive test functions and display important system status information.

At Access Level 3, press the **Engineering Functions** button and the window shown below left appears.

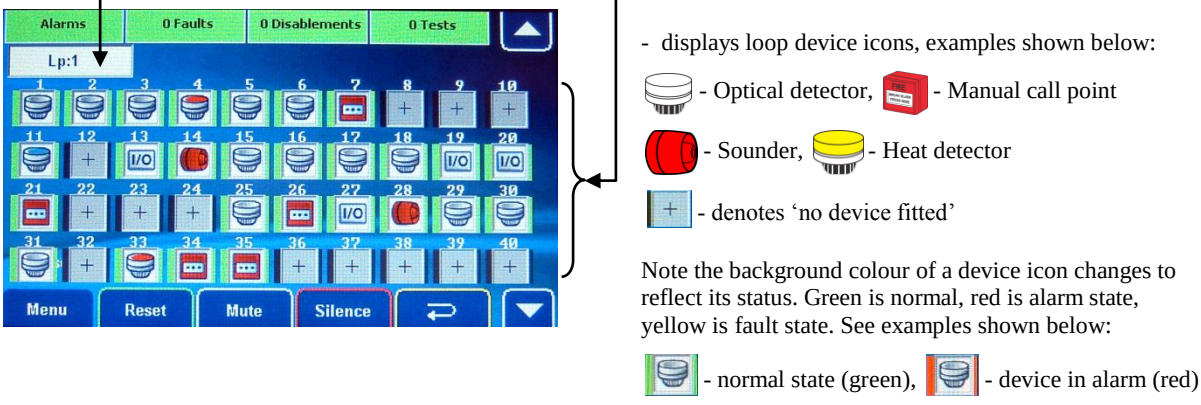
Scroll down ▼ to view additional engineering menu options (shown below centre and right).

Engineering functions are listed in sections 9.4.1 to 9.4.17.

9.4.1 Device Manager

Using this function you can display, edit and test all the addressable devices stored in the panel's memory which include loop devices, system devices and A-Bus devices.

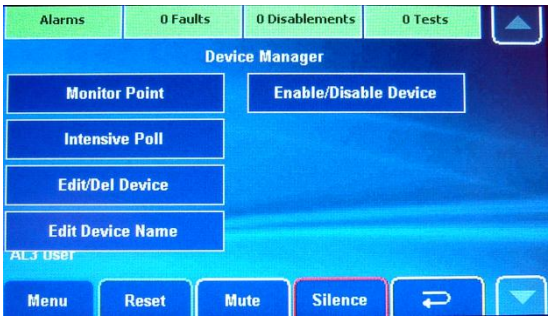
At Access Level 3 > Engineering Functions, press the **Device Manager** button and a window similar to the one shown below appears. Loop 1 devices are shown as an example.


Loop Number Field (Loop 1 shown selected)
Alarms
0 Faults
0 Disablements
0 Tests
Lp:1
Menu
Reset
Mute
Silence
Loop Devices window:
- displays loop addresses (up to 126 devices per loop)
- displays loop device icons, examples shown below:
- Optical detector,
- Manual call point
- Sounder,
- Heat detector
- denotes 'no device fitted'
Note the background colour of a device icon changes to reflect its status. Green is normal, red is alarm state, yellow is fault state. See examples shown below:
- normal state (green),
- device in alarm (red)

To view all the devices on the loop, press anywhere in the Loop Devices window and use the ▲ and ▼ buttons to scroll through all the devices.

Note: To view another loop's devices:

1. *Press anywhere in the Loop Number Field to highlight the loop number,*
2. *Use the ▲ and ▼ buttons to scroll to the desired loop (Loop 1, Loop 2, etc., SYSTEM or ABUS),*
3. *Press anywhere in the Loop Devices window,*
4. *Use the ▲ and ▼ buttons to scroll through all the devices.*

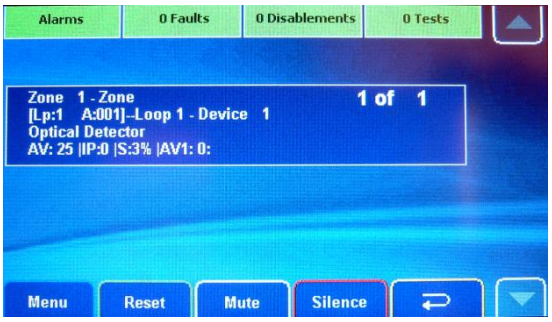


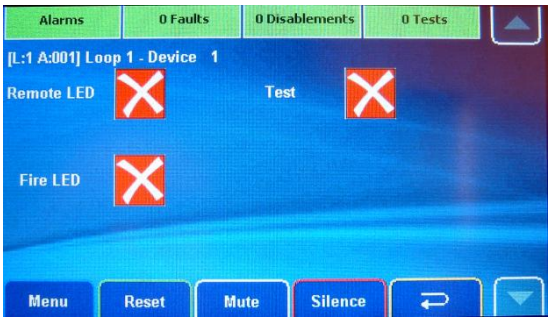
When an individual loop device icon is pressed another window appears (shown left) allowing the user to perform additional functions, which are listed below.

9.4.1.1 Monitor a Point

This function allows you to view the current analogue status of a specific addressable point on a loop. During this test, the panel temporarily disables the point being monitored from reporting, fires, pre-alarms and faults. Therefore, use this function with care.

Press the Monitor Point button to start the test and a typical display (shown below left) appears showing the analogue values. Press this button and a typical display (shown below right) appears. Note this display will differ for different devices (detectors, sounders, I/O units, etc.). In the example shown, select 'Remote LED', 'Fire LED' or 'Test'.



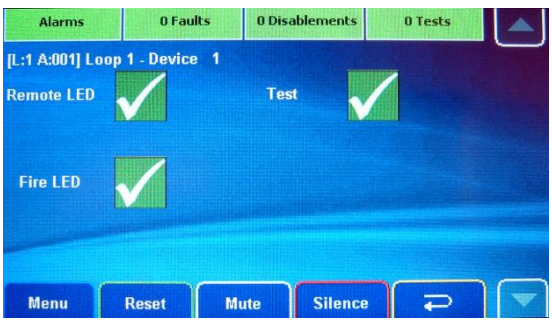


Press the button to start the test and the panel returns back its analogue values on the touchscreen.

9.4.1.2 Intensive Poll

This function allows you to monitor a specific addressable point on the system to see how it responds to intensive, repeated polls from the panel. During this test, the panel temporarily disables the point being monitored and also the panel from reporting fires, pre-alarms and faults. Therefore, use this function with care.

Press the Intensive Poll button to start the test and a typical display (shown below left) appears showing the polling results. Press this button and a typical display (shown below right) appears. Note this display will differ for different devices (detectors, sounders, I/O units, etc.). In the example shown, select 'Remote LED', 'Fire LED' or 'Test'.



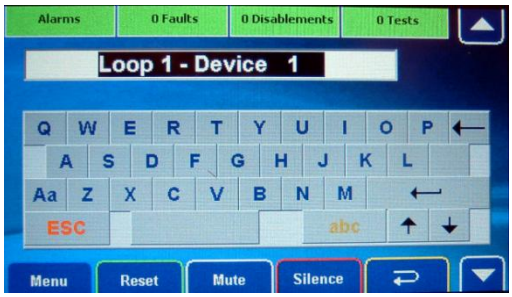
Press the button to start the test. As the device is intensively polled, some of its analogue values may change, helping to assist you to pinpoint loop wiring/communication faults and/or faulty devices. The running total of the number of good and bad polls between the panel and monitored device at any time appears in the top right corner of the display, e.g. '72' (denotes good poll) / '0' (denotes bad poll).

9.4.1.3 Edit/Delete Device

This function allows a selected device's parameters to be edited including:

- Device type
- Zone
- Input or Output Group
- Device name.

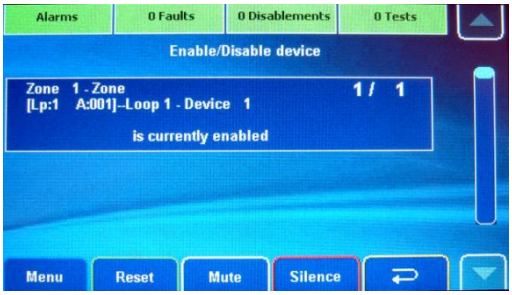
9.4.1.4 Edit Device Name



This function allows the text description assigned to specific devices to be created, or amended.

When selected, use the touchscreen's Qwerty keyboard to change the text description.

9.4.1.5 Enable/Disable Device



This function allows the state of a specific device to be toggled between 'enabled' and 'disabled' state.

9.4.1.6 Add Device

This function allows devices to be added to a loop.

In the Loop Devices window (shown in section 9.4.1), press a 'no device fitted' icon + and the display shown left appears.

Press the Add Device button and the display shown in section 9.4.1.3 appears allowing the device's parameters to be added.

9.4.2 Contamination Check

This function checks all detection devices on a loop for contamination.

When selected the display shown left is displayed showing the default minimum and maximum analogue values (AV).

Select which loop(s) to test and press the GO! button to start the contamination check.

After the check is completed, any detection devices that fall outside of the analogue range (below the Min AV, or above the Max AV) will be listed on the touchscreen.

9.4.3 Show PSU Status

This function allows you to view important information regarding the state of the panel's PSU and its standby battery supply.

9.4.4 Test Input Group

This function allows you to perform tests on the panel's Input Groups, e.g. simulate a manual call point input to the panel to test the cause and effects.

At Access Level 3 > Engineering Functions, press the Test Input Group button and choose the Input Group to be tested from the list of available groups. In the next window choose the type of test to be performed on the Input Group including: NORM or TRIG test.

9.4.5 Test Output Group

This function allows you to perform tests on the panel's Output Groups.

At Access Level 3 > Engineering Functions, press the Test Output Group button and choose the Output Group to be tested from the list of available groups. In the next window choose the type of test to be performed on the Output Group including: OFF, ON and PULSED test.

9.4.6 Walk Test

This function allows you to put one or more of the system's detection zones into walk test mode. When a zone is in walk test mode, any detector/manual call point triggered on that zone will turn on all of the sounders that are mapped to that zone for a brief period.

At Access Level 3 > Engineering Functions, press the Walk Test button and in the next window choose the type of test to be performed, e.g. Sounders Enabled, Detectors Only, etc. After making a selection, press the ✓ button and in the next window select the zone(s) you wish to put into walk test mode by pressing the zone button(s). This toggles the zone's state between NORMAL operation and ON TEST.

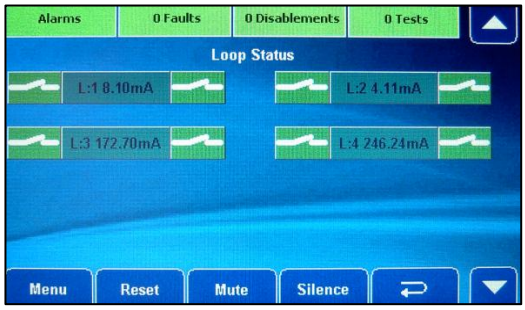
After making a selection, press the ⮌ button and confirm the changes by pressing the ✓ button.

Any zones in test can be viewed (and cancelled) by pressing yellow n Tests button on the top line of the touchscreen. Any devices not tested will be listed on the touchscreen.

9.4.7 Clear All Tests

This function globally clears all active tests on the system. The button is greyed out when there are no tests on the system.

9.4.8 Show Loop Status



This function allows you to view the level of electrical current being drawn by the addressable loop(s) and check the loop isolator condition.

At Access Level 3 > Engineering Functions, press the Show Loop Status button and a window similar to the one shown left appears.

If there is a fault on one of the loops the background colour of the switch will change from green to yellow.

The actual loop current drawn will depend upon the number of devices connected on a loop.

9.4.9 Change Access Level 2 (AL2) Code

This function is used to change the four-digit code needed to enter the panel's access level 2 menu options.

At Access Level 3 > Engineering Functions, press the Change AL2 Code button and the window shown below appears:

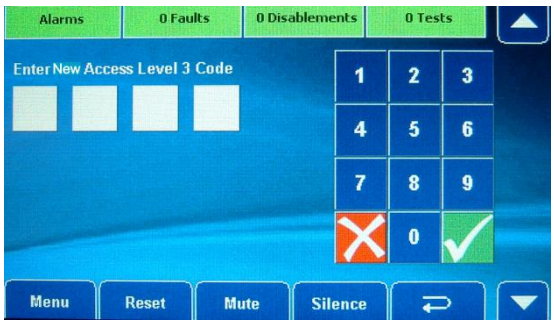
Use the touchscreen's numeric keypad buttons to enter the new access level 2 code. After the fourth digit has been entered, the panel will request you confirm the new code by re-entering it.

Enter the code again by pressing the buttons in the same sequence. If the two codes match, the panel will accept the code and you will be taken back to the engineering menus. If you type an incorrect confirmation code you will be prompted to start the new code entry sequence again.

9.4.10 Change Access Level 3 (AL3) Code

This function is used to change the four-digit code needed to enter the panel's access level 3 menu options.

At Access Level 3 > Engineering Functions, press the Change AL3 Code button and the window shown below appears:



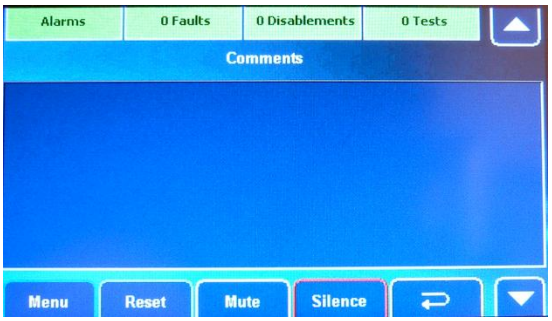
Use the touchscreen's numeric keypad buttons to enter the new access level 3 code. After the fourth digit has been entered, the panel will request you confirm the new code by re-entering it.

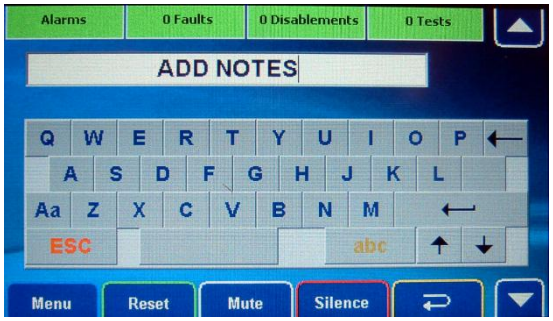
Enter the code again by pressing the buttons in the same sequence. If the two codes match, the panel will accept the code and you will be taken back to the engineering menus. If you type an incorrect confirmation code you will be prompted to start the new code entry sequence again.

9.4.11 Panel Notes

This function allows panel specific comments to be written by an authorised systems engineer. These comments are editable.

When selected, press anywhere in the Comments window (shown below left) and in the next window that appears use the touchscreen's Qwerty keyboard to add pertinent notes about the panel (shown below right).

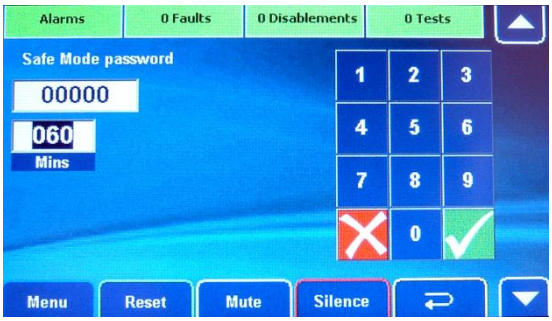




9.4.12 Show System Details

This function lists system details including the panel's firmware version number and internal SD memory card information.

9.4.13 Safe Mode

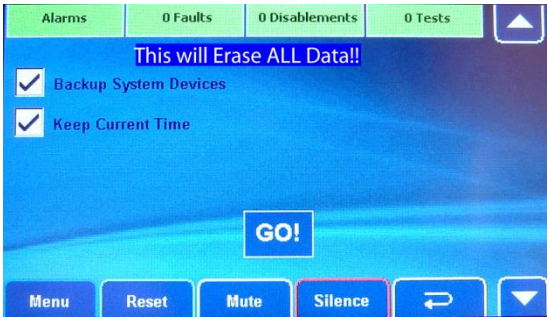


This function disables all of the panel outputs whilst tests are being performed on the system.

When selected you will be asked to enter the five-digit safe mode password. The default code is: **1 2 3 4 5**.

9.4.14 Clean Start

This function allows you to clear the panel's memory back to its factory default settings. When selected, you will be asked to enter the five-digit security code. The default code is: **3 2 7 6 7**.



CAUTION: Performing a clean start COMPLETELY ERASES the panel's memory (held on the internal SD memory card).

9.4.15 Backup System Devices

This function saves the panel's system devices to the internal SD memory card.

9.4.16 Restore System Devices

This function retrieves the panel's system devices from the internal SD memory card.

9.4.17 Diagnostics

This function is for advanced engineers and is not detailed in this manual.

9.5 Commissioning Functions

The Commissioning Functions menu is used to carry out numerous commissioning tasks including, a loop learn, view fitted devices, assign detectors/call points to Input Groups and sounders/beacons to Output Groups.

Hint: ZFP PC Tools (Part No. ZTOOLS) are available that allow quick and easy input of data, cause and effect programming, device and zone naming, etc. Contact your supplier for details.

At Access Level 3, press the Commissioning Functions button and the window shown below left appears.

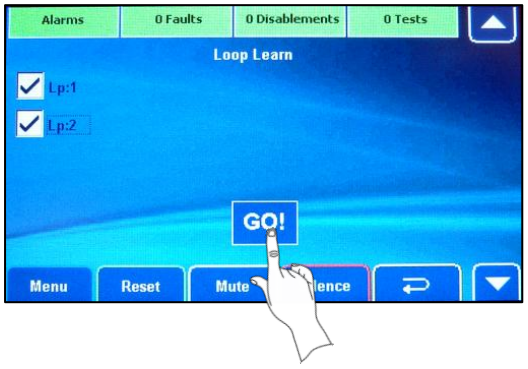
Scroll down to view additional commissioning menu options (shown below right).

Commissioning functions are listed in sections 9.5.1 to 9.5.13.

9.5.1 Loop Learn

During a loop learn, the panel interrogates every device fitted on a selected loop to identify their address and to find out the type of device. This provides the opportunity to identify any missing devices, double-addressed devices, incomplete loops as well as wrong device types.

At Access Level 3 > Commissioning Functions, press the Loop Learn button and the window shown below appears.



Select the loop(s) you want the panel to learn (Loop 1 and Loop 2 are shown selected left), then press the GO! button. A progress bar will be shown during the loop learn process. Depending on the size of the installation, the loop learn process can take several minutes.

AFTER A SUCCESSFUL LOOP LEARN YOU WILL HAVE A SINGLE ACTIVE ZONE (I.E. ZONE 1) "ONE OUT, ALL OUT" FIRE ALARM SYSTEM!

Note that by default the loop learn will assign all detectors, manual call points and inputs of I/O units to Input Group 1 and all sounders, beacons and outputs of I/O units to Output Group 1. This is to ensure that all of the system's sounders will activate in the event of a fire condition anywhere in the building, i.e. one out, all out. No special cause and effects events are assigned. These default settings can be modified as appropriate using the panel's PC Tools at a later date.

9.5.2 Device Manager

At Access Level 3 > Commissioning Functions, press the Device Manager button.
Refer to Device Manager section 9.4.1 for details.

9.5.3 Find New Devices

This function is similar to performing a loop learn and enables new devices (or changed devices) installed on a loop to be detected by the panel and then programmed.

9.5.4 Add/Delete/Edit a Device

Refer to Device Manager section 9.4.1.3 for details.

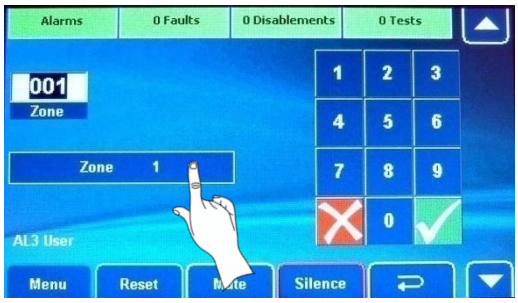
9.5.5 Edit Zone Name

This function allows a text description to be assigned to a zone.

At Access Level 3 > Commissioning Functions, press the Edit Zone Name button and a window similar to the one shown below left appears.

To change a zone's text description, press the text description button ('Zone 1' is shown as an example) and the window shown below right appears. Amend the text using the touchscreen's standard Qwerty keyboard controls.

To select a different zone for editing, either press the zone number field (001 shown below left) and use the and buttons to scroll through the zones, or enter the zone number directly into the zone number field using the touchscreen's numeric keypad.



9.5.6 Edit Input Group Name

This function allows text descriptions for Input Groups to be changed.

At Access Level 3 > Commissioning Functions, press the Edit Input Group Name button and a window similar to the one shown below appears.

Amend the text descriptions by following the same operating procedure detailed in section 9.5.5.

9.5.7 Edit Output Group Name

This function allows text descriptions for Output Groups to be changed.

At Access Level 3 > Commissioning Functions, press the Edit Output Group Name button and a window similar to the one shown below appears.

Amend the text descriptions by following the same operating procedure detailed in section 9.5.5.

9.5.8 Setup Panel Printer

This function is used to set various printing options if a panel printer is fitted, including print alarms, print faults, etc.

9.5.9 Setup Networking

This function is used to assign network ID addresses to Segments.

Refer to networking section 6.5 for details.

9.5.10 Select Language

This function changes the text language of the touchscreen buttons and menus. The default language is English.

9.5.11 Synchronise Network Data

This function synchronises data held by various panels connected on a networked system, including loop numbers, loop addresses, device types, zones, Input Groups and Output Groups.

Using this function, updated files are copied from panel to panel with the purpose of keeping the data held by each panel identical to eachother. If the system is not working correctly, this function can be used for troubleshooting purposes.

9.5.12 LCD Auto-Dimming

This function adjusts the touchscreen's power save mode.

At Access Level 3 > Commissioning Functions, press the LCD Auto-Dimming button and the window shown below appears.

By default, the LCD backlight will switch off after 60 seconds. To select a different dimming time press the 'Secs' field (060 shown left) and use the ▲ and ▼ buttons to adjust the time, or enter the time directly into the field using the touchscreen's numeric keypad.

Enter '0' to disable power save mode.

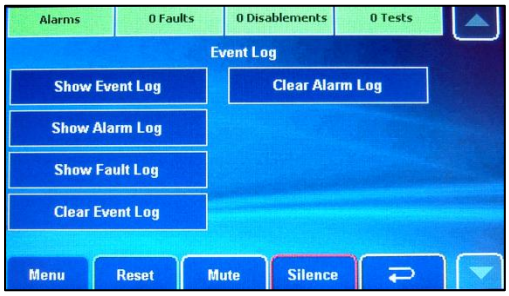
9.5.13 Set Loops Fitted

This function sets the number of loops the panel's firmware assigns to a panel. Note that the actual physical number of loops that can be connected to a panel is dependent on the number of loop driver modules fitted, i.e. Main 2-Loop PCB, 2-Loop PCB, etc.

9.6 Event Log Functions

This function lists, filters and resets the panel's event, alarm or fault log. Also, a hard copy of each log may be printed using the integral printer (if fitted).

At Access Level 3, press the Event Log Functions button and the window shown below appears:



The **Show Event Log** button, when pressed, lists both the panel's event and alarm log (up to 20,000 events). This includes fire, fault and system events.

The **Show Alarm Log** button, when pressed, lists only the panel's alarm log. Typically, alarm events include activated fire alarms, panel silenced and panel reset.

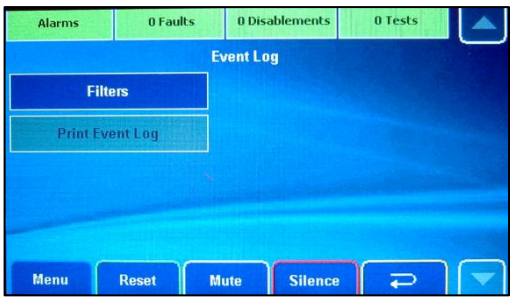
The **Show Fault Log** button, when pressed, lists the panel's fault log. Typically, faults include missing devices, earth faults, open/short circuit faults and watchdog resets.

The **Clear Event Log** and **Clear Alarm Log** buttons, when pressed, clears the respective log from the panel's memory. To ensure a log is not erased by mistake, a five-digit security code requires entering using the touchscreen's numeric keypad. The default code is: **3 2 7 6 7**.

The window shown left is a typical list of saved events.

Press the ▲ and ▼ buttons (or use the scroll bar) to scroll through the list. Events are listed in chronological order with the most recent listed first. When the log is full, the oldest record is deleted and replaced by the newest record.

Event log button
(displays both panel events and alarms)



To either filter, or print, the log, press one of the blue event log buttons and the window shown left appears.

The **Filters** button, when pressed, allows events to be listed by Date Range or Device Address.

The **Print Event Log** button, when pressed, allows you to print a hard copy of the panel's log to the integral printer (if fitted).

9.7 Disablement Functions

This function allows you to enable, or disable, parts of the system including zones, individual devices, sounders, Input Groups, Output Groups and the panel's printer (if fitted).

Remember, any active disablement(s) can be viewed (and cleared) at any access level by pressing the yellow n Disablements button on the top line of the touchscreen.

Note: It is strongly recommended all disablements are regularly reviewed and immediately cleared when no longer necessary as they can have a major effect on how the system works.

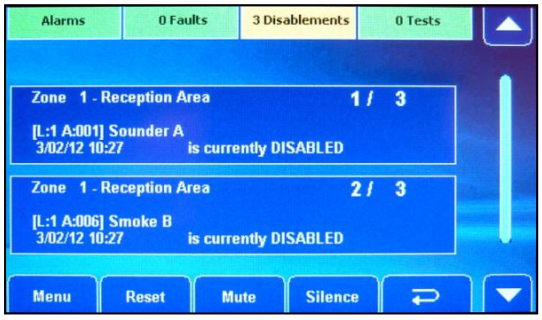
At Access Level 3, press the Disablement Functions button and a window similar to the one shown below will appear.

Note: If a function is unavailable it will be 'greyed' out, e.g. the Panel Printer button.

9.7.1 Supervisory Disablements

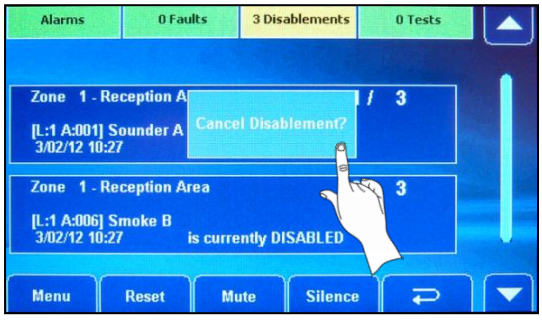
This function is only available when there are hidden 'supervisory' disablements on the system, which are programmed by an authorised systems engineer. Supervisory functions include none-fire, none-fault related events, e.g. class change, gas shut off valve operated, emergency lighting system signals, etc.

At Access Level 3 > Disablement Functions, press the Supervisory Disablements button and a window similar to the one shown below will appear detailing the type and location of the disablement. **Note**: The total number(n) of disablements is also shown on the yellow n Disablements button ('3' shown in example below).



If there are more than one disablement, the top right corner of the window will show, for example "1 / 3" and can be scrolled through using the ▲ and ▼ buttons, or by using the scroll bar.

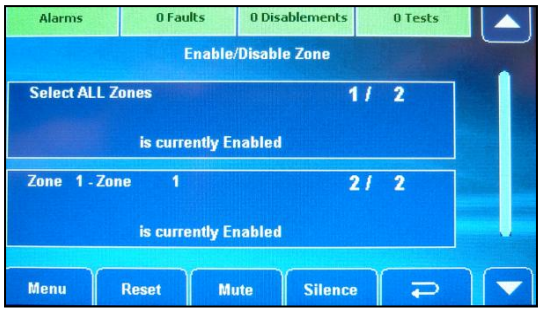
To cancel a specific disablement, press the individual blue disablement button (Disabled Sounder A located in Zone 1 – Reception Area is shown in the example). A small Cancel Disablement? button appears (shown below). Press this button to confirm the cancellation.

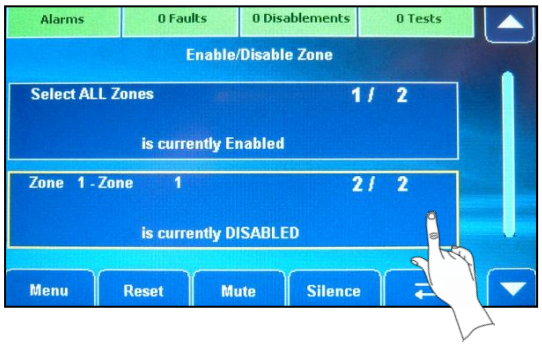


9.7.2 Enable/Disable Zones

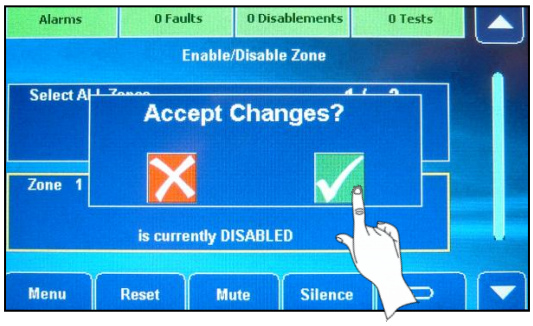
This function allows you to disable (and re-enable) all zones or selected zones, from reporting fires, faults, , pre-alarms, etc., and is normally used to temporarily disable detectors, including manual call points, in a selected zone. For example, in areas where work is being carried out that could trigger an erroneous fire alarm.

At Access Level 3 > Disablement Functions, press the Zones button and a window similar to the one shown below left will appear.





Press the ▲ and ▼ buttons (or use the scroll bar) to scroll the display through all available zones. Toggle a selected zone's enabled/disabled state by pressing the individual zone button (Zone 1 status is changed from enabled to disabled in the example above). After changing a zone's status, press the ↩ button and the window below left will appear.



Confirm the zone's status change by pressing the ✓ button.

Important Note: The status change ONLY becomes effective AFTER the ✓ button has been pressed.

9.7.3 Enable/Disable Devices

This function allows system devices to be disabled (and re-enabled) from reporting fires, faults, pre-alarms, etc., and is normally used to temporarily disable detectors/manual call points that are nuisance tripping.

At Access Level 3 > Disablement Functions, press the Devices button and the window shown below will appear:

Press the **By Zone** button to select and disable all devices within a specific zone, or press the **By Address** button to select and disable individual devices by entering their loop number and address.

Follow the same operating procedure previously listed in section 9.7.2.

9.7.4 Enable/Disable Sounders

This function is used to disable (and re-enable) one or more sounders from sounding in a fire condition.
Note: Sounders include the panel's conventional sounders (powered from the panel) and loop sounders (loop powered) and form part of an Output Group, which are programmed by an authorised systems engineer.

At Access Level 3 > Disablement Functions, press the Sounders button and follow the same operating procedure previously listed in section 9.7.2.

9.7.5 Enable/Disable Input Groups

This function is used to disable (and re-enable) one or more Input Groups from activating. **Note**: Input Groups comprise of detectors, MCPs, inputs of I/O units, keyswitches and other input devices and are programmed by an authorised systems engineer.

At Access Level 3 > Disablement Functions, press the Input Groups button and follow the same operating procedure previously listed in section 9.7.2.

9.7.6 Enable/Disable Output Groups

This function is used to disable (and re-enable) one or more Output Groups from activating. **Note**: Output Groups comprise of loop and conventional panel sounders, beacons, outputs of I/O units, relays and other output devices and are programmed by an authorised systems engineer. This function is typically used to disable, for example, auto-diallers and other ancillary equipment from activating during routine maintenance.

At Access Level 3 > Disablement Functions, press the Output Groups button and follow the same operating procedure previously listed in section 9.7.2.

9.7.7 Enable/Disable Panel Printer

This function is used to disable (and re-enable) the panel printer (if fitted).

At Access Level 3 > Disablement Functions, press the Panel Printer button and follow the same operating procedure previously listed in section 9.7.2.

9.7.8 Clear All Disablements

This function is used to globally clear all current disablements on the system.

At Access Level 3 > Disablement Functions, press the Clear All Disablements button and follow the same operating procedure previously listed in section 9.7.2.

9.8 Set the Panel's Time and Date

This function is used to set the panel's time and date, which is required for accurate logging of events in the panel's log. The panel has a real-time 24 hour clock with default time and date settings. An automatic DST (Daylight Saving Time) option is available which will automatically adjust the panel's clock one hour forward on the last Sunday in March and one hour backward on the last Sunday in October.

At Access Level 3, press the Set Time/Date button and a window similar to the one shown below appears.

Adjust the time and date using the touchscreen's numeric keypad and buttons. Also, set/unset the daylight saving time by pressing the **DST** tick box.

When correct, press the button to return to the main access level 3 menus.

9.9 Show Supervisory Events

This function is only available if relevant to the panel's status, i.e. if access level 3 supervisory events have been programmed by an authorised systems engineer.

At Access Level 3, press the Show Supervisory button. The display shows all access level 3 none-fire, none-fault related events, e.g. class change, gas shut off valve operated, panel keyswitch activated, emergency lighting system signals, etc.

10 MAINTENANCE

Periodic/routine maintenance should be carried out in accordance with all applicable national, regional or local regulations, standards and working practices. Maintenance of equipment external to the control panel will be detailed in the appropriate manufacturer's literature. The following is recommended as a guideline only.

Daily (Authorised User Responsibility)

- ✓ Check the panel's indicators and touchscreen indicate normal operation and no faults are present on the system.
- ✓ Ensure the Fire Alarm Log Book is kept up to date by recording fire signals, fault signals, work on the system, etc.

Monthly (Authorised User Responsibility)

- ✓ At least one manual call point or detector (from different zones each month) should be operated to test the fire panel and any connected alarm/warning devices. This operation should be carried out on a rotating basis, so that all devices are checked at least once over a period of 3 months.
- ✓ Where permissible, any link to the fire brigade or remote manned centre should be operated.
- ✓ Any defects should be recorded in the Fire Alarm Log Book and reported to the maintenance provider.

Quarterly (Authorised Service Personnel Responsibility)

- ✓ Check entries in the Fire Alarm Log Book and inspect the panel's event log, taking appropriate corrective action where necessary.
- ✓ Check the alarm, fault and ancillary functions of the panel.
- ✓ Visually inspect the exterior of the enclosure for any signs of damage or loose cable glands and rectify any faults found. Inspect the panel interior for any moisture ingress or other deterioration. Examine the printed circuit boards for signs of over-heating or damaged tracks. Replace any defective items.
- ✓ Enquire if any structural alterations have been made which could affect the operation of call points, detectors or sounders, if so carry out a visual inspection.
- ✓ Any defects should be recorded in the Fire Alarm Log Book and corrective action taken.

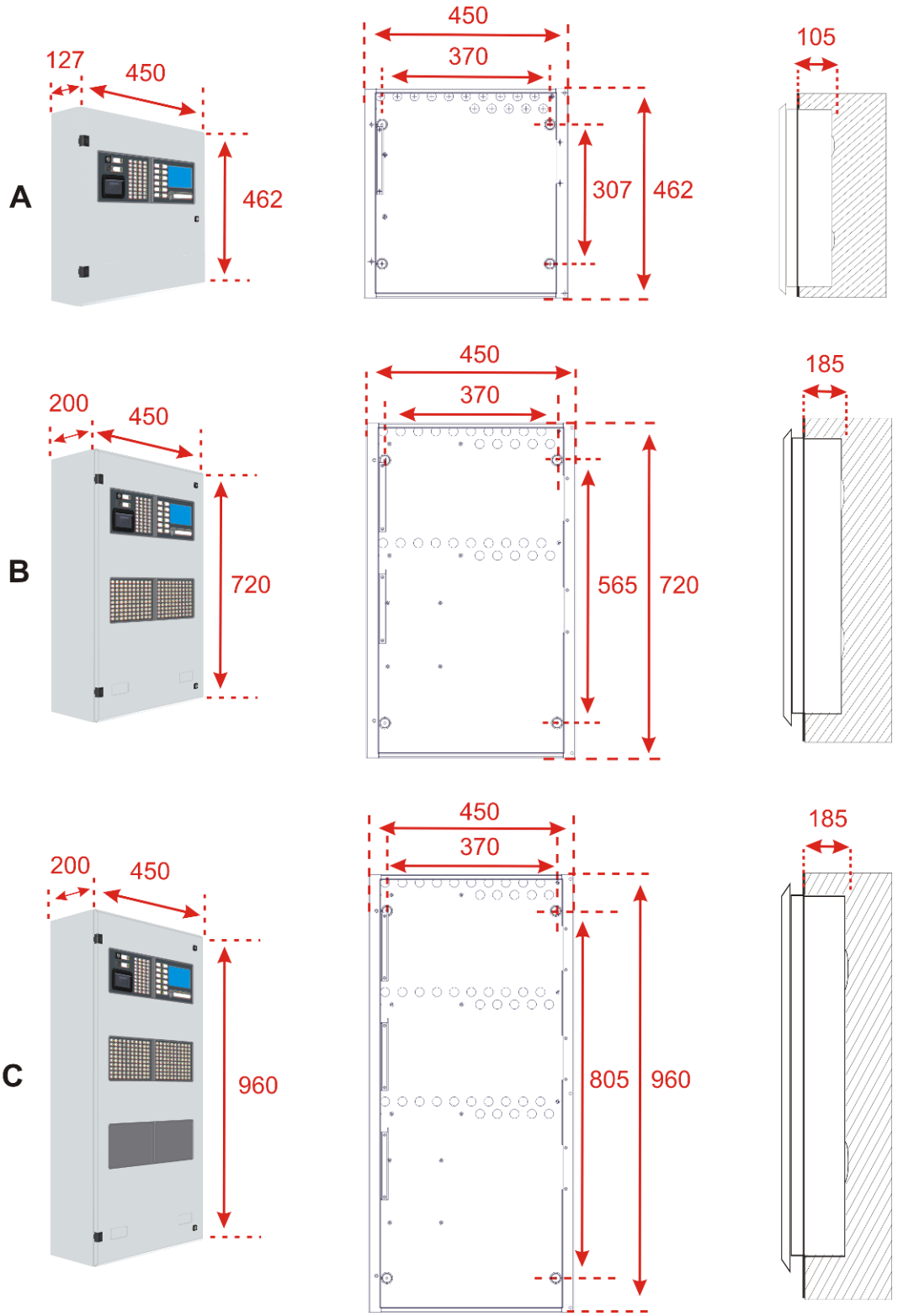
Yearly (Authorised Service Personnel Responsibility)

- ✓ Carry out the recommended daily, monthly and quarterly maintenance schedules.
- ✓ 'Walk Test' the system and check that each detector operates in accordance with the manufacturer's recommendations.
- ✓ Visually inspect all cable fittings and ensure equipment is secure, undamaged and adequately protected.
- ✓ Examine the panel's standby batteries for integrity of the connections, signs of corrosion. Perform a periodic load test with the Mains supply disabled to ensure adequate battery capacity. The batteries are maintenance free and therefore should only be replaced if there is any doubt about their integrity.

CAUTION: There is a risk of explosion if an incorrect battery type is used. Always dispose of used batteries in accordance with the battery manufacturers' instructions.

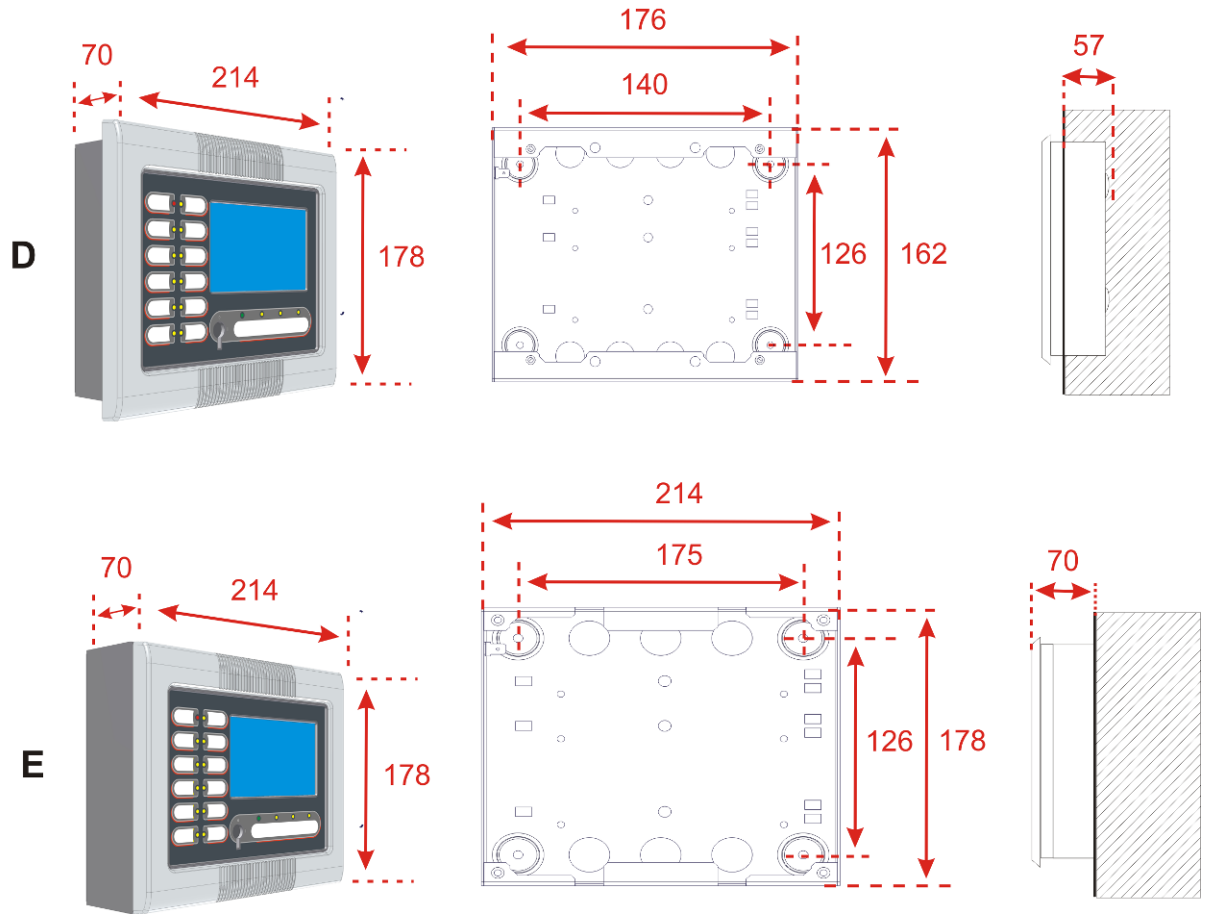
- ✓ Any defects should be recorded in the Fire Alarm Log Book and corrective action taken.

Appendix 1 – Enclosure Dimensions and Fixing Details



All dimensions in mm. Drawings not to scale.

A	Standard Shallow Enclosure. 2, 4 loops (fits up to 2 x 18Ah batteries). Part No. ZBOXS.
B	Medium Deep Enclosure. 2, 4, 6, 8 loops (fits up to 2 x 18Ah batteries). Part No. ZBOXM.
C	Large Deep Enclosure. 2-4-6-8 loops (fits up to 2 x 38Ah batteries). Part No. ZBOXL.

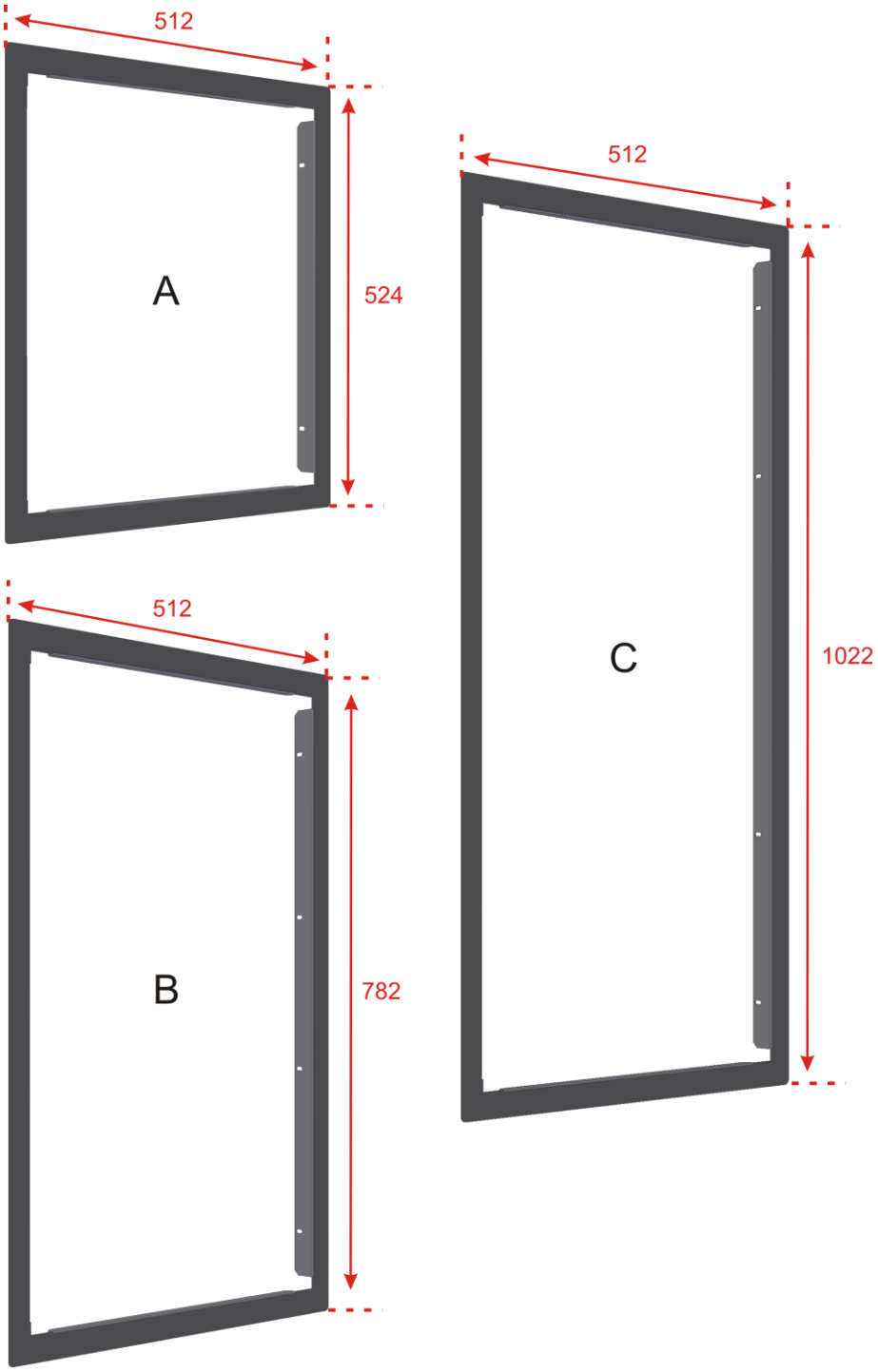


All dimensions in mm. Drawings not to scale.

D	Compact Controller – Flush Mount. Multipath network (Part No. ZREP1F), Singlepath network (Part No. ZREP2F).
E	Compact Controller – Surface Mount. Multipath network (Part No. ZREP1S), Singlepath network (Part No. ZREP2S).

Appendix 2 – Bezels (Flush-Mount)

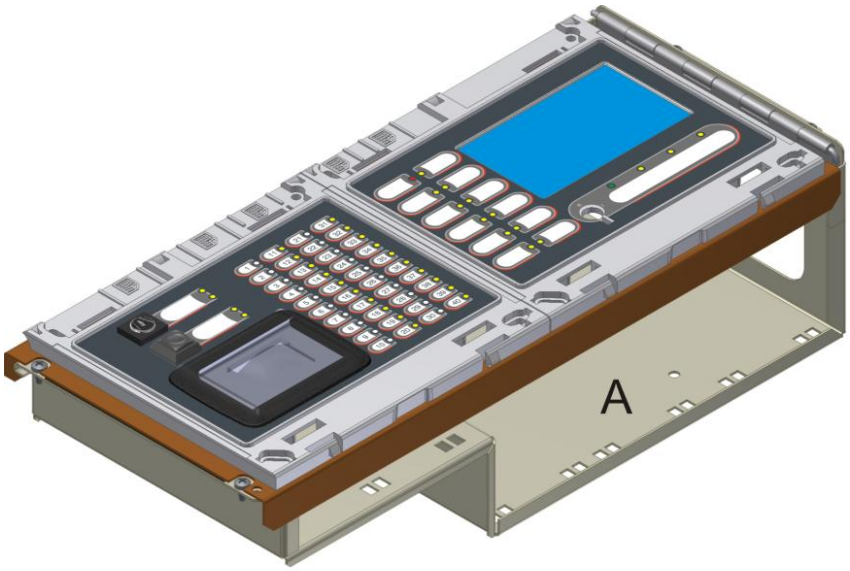
Three bezel sizes are available for the ZFP range of panels allowing the panels to be flush-mounted on a wall.

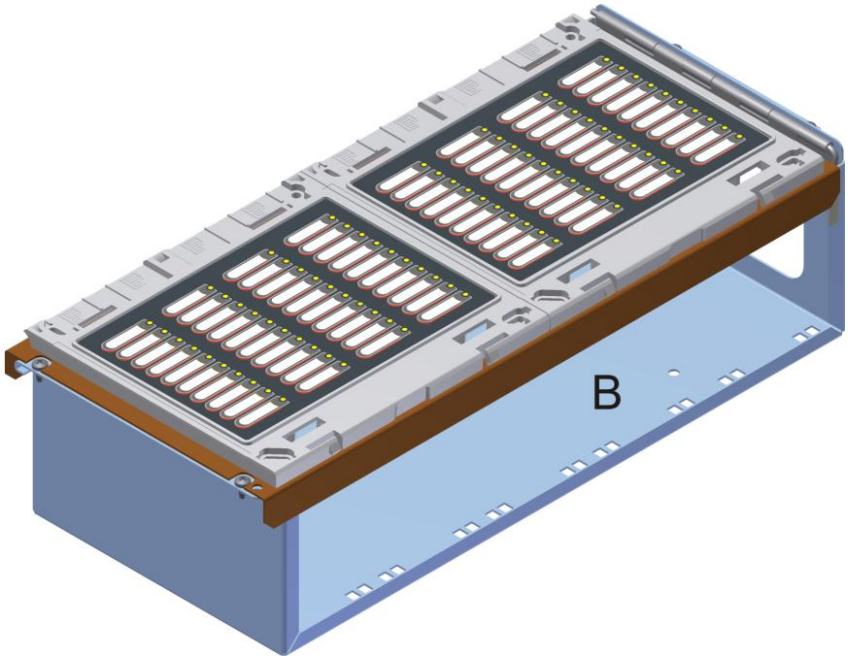


All dimensions in mm

A	Standard 2, 4 Loop Bezel. 1.2mm thickness. Part No. ZBEZS.
B	Medium 2, 4, 6, 8 Loop Bezel. 1.2mm thickness. Part No. ZBEZM.
C	Large 2, 4, 6, 8 Loop Bezel. 1.2mm thickness. Part No. ZBEZL.

Appendix 3 – Chassis

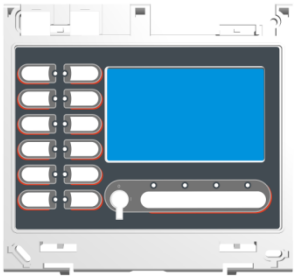




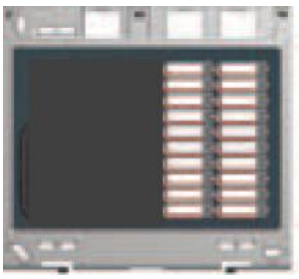
All dimensions in mm

A	Stepped Chassis. Part No. ZCHA1
B	Flat Chassis. Part No. ZCHA2

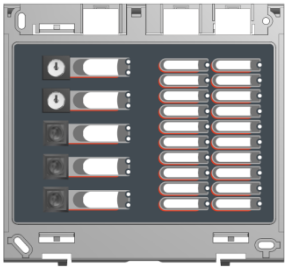
Appendix 4 – List of Modules



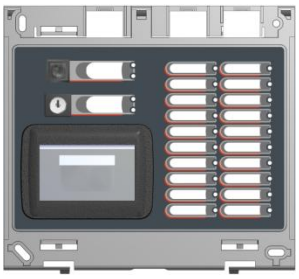
Control/Display module c/w 4.3” touchscreen, keyswitch, 16 LEDs
- Part No. Z41



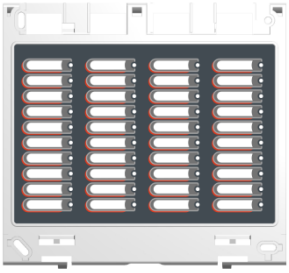
20 zone indicator module c/w name slots
- Part No. Z44



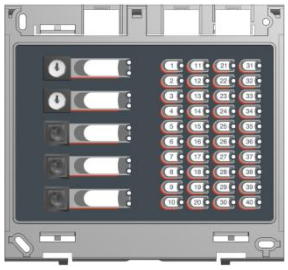
20 zone indicator module c/w name slots, 5 switches, 10 bi-colour function LEDs
- Part No. Z45



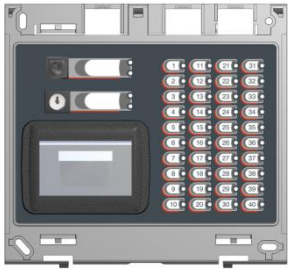
20 zone indicator module c/w name slots, printer, 2 switches, 4 bi-colour function LEDs
- Part No. Z46



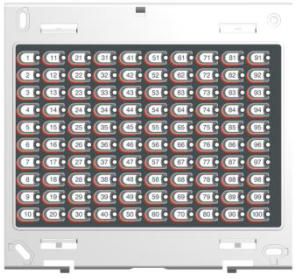
40 zone indicator module c/w name slots
- Part No. Z47



40 zone indicator module c/w 5 switches, 10 bi-colour function LEDs
- Part No. Z48

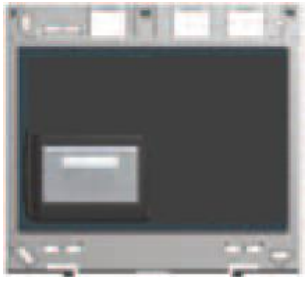


40 zone indicator module c/w printer, 2 switches, 4 bi-colour function LEDs
- Part No. Z49



100 zone indicator module (numbered 1-100)
- Part No. Z50/1-100

100 zone indicator module (numbered 101-200)
- Part No. Z50/101-200



Printer module
- Part No. Z51

Blank module
- Part No. ZBLANK

Appendix 5 – Standby Battery Calculation Guide

The standby time of the fire alarm panel, after the Mains has failed, depends on the quiescent and alarm loading of the panel, and the capacity of the batteries. To determine the capacity of batteries required for any given stand-by period, the following formula should be used:

Battery Capacity in Ah = 1.25 x [(T x (A + L x 1.5) + H x (P + Z x 1.5)]

Alarm Capacity Quiescent Capacity

The multiplier 1.25 is present to account for lost capacity over the life of the batteries.

H = Number of hours standby required (e.g. 24Hrs).

P = The quiescent current of the panel. 4 loop panel = 120mA (0.12A); 8 loop panel = 190mA (0.19A).

This value is with the Mains failed, beeper silenced and the Supply Present and General Fault indicators lit. If there are other quiescent drains on the panel then these must be added in.

Z = The total quiescent current of all loop devices

As a guideline, the total quiescent current of all addressable devices for a 4 loop panel and 8 loop panel, with 80 devices per loop, is typically 204mA (0.204A) and 408mA (0.408A) respectively.

To obtain accurate values consult the device manufacturers' own specifications.

A = The total alarm current of panel sounders and activated relays. Conventional sounder load is 250mA (0.25A), a panel relay consumes 20mA (0.02A) when activated.

L = The total alarm current of loop devices per loop (sounders, beacons etc.) is typically 150mA (0.15A).

T = The amount of time in hours required for the alarm (e.g. half an hour, 0.5Hrs).

Example calculation for a 4 loop panel:

The 4 loop panel has 80 devices per loop (320 in total) with a total quiescent current of 204mA (0.204A) for all loop devices. In alarm, the alarm current per loop is 0.15A (0.6A in total), 2 panel relays activated at (0.02A each), and a conventional sounder load of 0.25A. The required standby time is 24 hours, and the required alarm time is 0.5 hours.

Calculate the alarm capacity: **= T x (A + L x 1.5)**

T = 0.5Hrs; **A** = 0.25 + 2 x 0.02 = 0.29A; **L** = 0.15 x 4 = 0.6A

Therefore, the alarm capacity is: = 0.5 x (0.29 + 0.6 x 1.5)
= 0.668Ah

Calculate the quiescent capacity: **= H x (P + Z x 1.5)**

H = 24Hrs; **P** = 0.12A; **Z** = 0.204A

Therefore, the quiescent capacity is: = 24 x (0.12 + 0.204 x 1.5)
= 11.664Ah

Total Battery Capacity: = 1.25 x (0.668 + 11.664)
= 15.42Ah

Appendix 6 – ZFP Technical Specification

	STANDARD 2 / 4 LOOP VERSION
Power Supply and Charger	
Mains supply voltage / Rated Current	230Vac ±10% 50/60Hz / 1.35A max.
Internal Power Supply	27Vdc, 5A
Maximum continuous output current (including charging)	5A
Maximum internal battery resistance (Ri max.)	600mohm
Battery charge capacity	7Ah min to 18Ah max.
Max. VRLA battery size and type	2 x 12V, 18Ah
Power rating	Imax. a = 4A Imax. b = 5A Imin = 12mA
Output Voltage	Vmin = 19.2V Vmax = 30V
Output ripple voltage (peak-to-peak)	450mV@30MHz bandwidth, 350mV with a 100nF loading
Mains supply/battery charger monitored for failure	Yes
Batteries monitored for disconnection and failure	Yes
Earth fault monitoring	Yes
Loop Driver Specification	
Number of Loops available	2 or 4
Connector blocks	Plug-on type, largest acceptable cable size 2.5mm^2
Loop driver PCB type	Main 2-Loop PCB (Loop 1&2) and 2-Loop PCB (Loop 3&4)
Max. output current per loop	500mA (Voltage: 25V min; 34V max)
Communication Protocols	Apollo's XP95/Discovery
Auto-polling from each loop end	Yes
Max. number of addressable devices	126 per loop
Line monitored for o/c and s/c faults	Yes
Conventional Sounder Circuits	
Number of circuits	2 x 1A outputs. Programmable and Monitored. Protected by resettable overload circuit.
Connector blocks	Plug-on type, largest acceptable cable size 2.5mm^2
EOL resistor (supplied)	6800 ohm, 5% tolerance, 0.25W
Output voltage	19.5V minimum; 28V maximum
Line monitored for o/c and s/c faults	Yes
Auxiliary Inputs	
Input 1 & Input 2	Connect to 0V to trigger, Max. input voltage 27Vdc (non-latching). Programmable using PC Tools.
EOL resistor value (supplied)	6800 ohm, 5% Tolerance, 0.25W
Trigger resistor (supplied)	470R 0.25W
Line monitored for o/c and s/c faults	Yes
Relay Outputs	
Number of outputs	2 x auxiliary relays; 1 x fault relay; 1 x 24Vdc auxiliary power output
Relay type	Voltage free, single pole changeover
Relay output	1A, 30Vdc (maximum)
Auxiliary relays 1 & 2	Programmable using PC Tools
Fault relay	Active when faults are present or total power failure
24Vdc auxiliary power output	19.5V minimum, 28V maximum. Max current 100mA.
Fuses (compliant to IEC EN60127 Pt2)	
Primary fuse (F1) supplied	2A, HRC, 20mm ceramic
Battery fuse (F2) supplied	5A, F, 20mm glass
Indicators and Controls	
Indicators	Up to 200 separate LEDs programmable. Plus mandatory EN 54 indications.
Display	LCD Touchscreen, 4.3 inch, 472 x 248 pixel, 24 bit, 16M colour resistive
Keyswitch (on Control/Display module)	Enables direct entry to access level 2
Cables and Connectors	
Type of cable	Fire resistant, screened cable, minimum size 1mm^2
Max. cable length per loop	1km
Connector blocks (loops and sounders)	Plug-on type, largest acceptable cable size 2.5mm^2
Max. allowable loop impedance (each conductor)	20 ohm
Max. cable capacitance	.27uF
A-Bus cabling	2 core plus screen, plus 2 core for power supply which may be local

	STANDARD 2 / 4 LOOP VERSION
Network specification	
Multipath & singlepath networks	See Section 6.1 for summary of features
Communication Buses	
On-board Serial Printer (Optional)	1 x RS232 connector
Pager/DECT Interface	1 x RS232 connector
IFAM FAT/FBF PCB	1 x RS485 connector
Peripheral Bus (A-Bus)	1 x RS485 connector. Connects to peripheral PCBs (15 max per panel)
PC Interface	USB connector (CONN3) provided on the Control/Display module (Z41)
A-Bus PCBs	
A-Bus Peripheral PCBs	4-way Relay PCB (half size). Part No.Z11. 8-way Relay PCB (full size). Part No.Z12. 8-way I/O PCB (half size). Part No. Z13. 16-way I/O PCB (full size). Part No. Z14.
A-Bus cabling	2 core screened cable, plus 2 core for the power supply which may be local
Number of PCBs	Up to 15 per network interface PCB per Main 2-Loop PCB
A-Bus Features	See Section 7.1 for a summary of A-Bus features
Ancillary Modules	
Indicator/Printer Modules	Control/Display Module c/w LCD, touchscreen, keyswitch, 16 LEDs. Part No. Z41. 20 zone Indicator Module c/w name slots. Part No. Z44. 20 zone Indicator Module c/w name slots, 5 switches, 10 LEDs. Part No. Z45. 20 zone Indicator Module c/w name slots, printer, 2 switches, 4 LEDs. Part No. Z46. 40 zone Indicator Module c/w name slots. Part No. Z47. 40 zone Indicator Module c/w 5 switches, 10 LEDs. Part No. Z48. 40 zone Indicator Module c/w printer, 2 switches, 4 LEDs. Part No. Z49. 100 zone Indicator Module, numbered 1-100. Part No. Z50/1-100. 100 zone Indicator Module, numbered 101-200. Part No. Z50/101-200. Printer Module. Part No. Z51. Blank Module. Part No. ZBLANK.
Mechanical (ZBOXS)	
Dimensions H x W x D mm	462 x 450 x 127
Fixing Centres H x W mm	4 holes at 307 x 370
Weight kg (unpacked, excluding batteries)	11.1
Cable Entries (20mm knockouts)	23 top / 16 top rear
Enclosure (lid & back box)	Mild steel / Zintec 1.2mm thick
IP Rating (to EN 60529)	IP30
Case Colours	
Paint finish	Light grey texture (RAL7035) epoxy paint
Environmental	
Operating Temperature	-5°C to +40°C
Humidity	5% to 95 % R.H non-condensing

Appendix 7 – Glossary of Terms

Addressable System: A fire alarm and detection system that contains addressable control devices.

AL1: Access Level 1 (for general users).

AL2: Access Level 2 (for authorised users).

AL3: Access Level 3 (for authorised systems engineers).

BS EN 54-1: Fire Detection and Fire Alarm Systems

BS EN 54-2: Control and Indicating Equipment

BS EN 54-4: Power Supply Equipment

Compact Controller: A fire alarm control panel with no field device loops connected that can be used to control certain functions of the system. A Compact Controller is a node when connected as part of a network.

DST: Daylight Saving Time.

EOL: end-of-line resistor, value 6k8, ½ watt.

Input Device: Any device that can signal an event such as 'fire', 'fault', etc. to the fire alarm and detection system, e.g. fire detectors, manual call points, I/O units.

Input Group: Comprise of grouped input devices and used in the C&E programming (max. 1000).

Input Supergroups: Comprise of selected Input Groups and used in the C&E programming (max. 32).

I/O: Input/Output (device) - device that is connected to a fire alarm and detection system and is used to receive and/or transmit information within the system.

LCD: Liquid Crystal Display

Network: Either a Multipath network arranged as a loop so that a single fault does not prevent the system from working, or a Singlepath network arranged as a daisy-chain where a fault prevents the system from working. Multipath maximum number of nodes is 128; Singlepath maximum number of nodes is 8.

N/C: Normally closed (relay contact).

N/O: Normally open (relay contact).

Node: Adding a network interface PCB to a panel allows it to become a network node. Compact Controllers include a network interface PCB fitted as standard.

Output Device: Any device that can act on a command from the fire alarm and detection system, e.g. sounder, beacon, relay, etc.

Output Group: Comprise of grouped output devices and used in C&E programming (max. 1000).

Output Supergroups: Comprise of selected Output Groups and used in C&E programming (max. 32).

Panel: A fire alarm control panel with 2, 4, 6 or 8 field device loops connected to it that can be used to configure a fire alarm and detection system. A panel is a node when connected as part of a network.

PCB: Printed Circuit Board

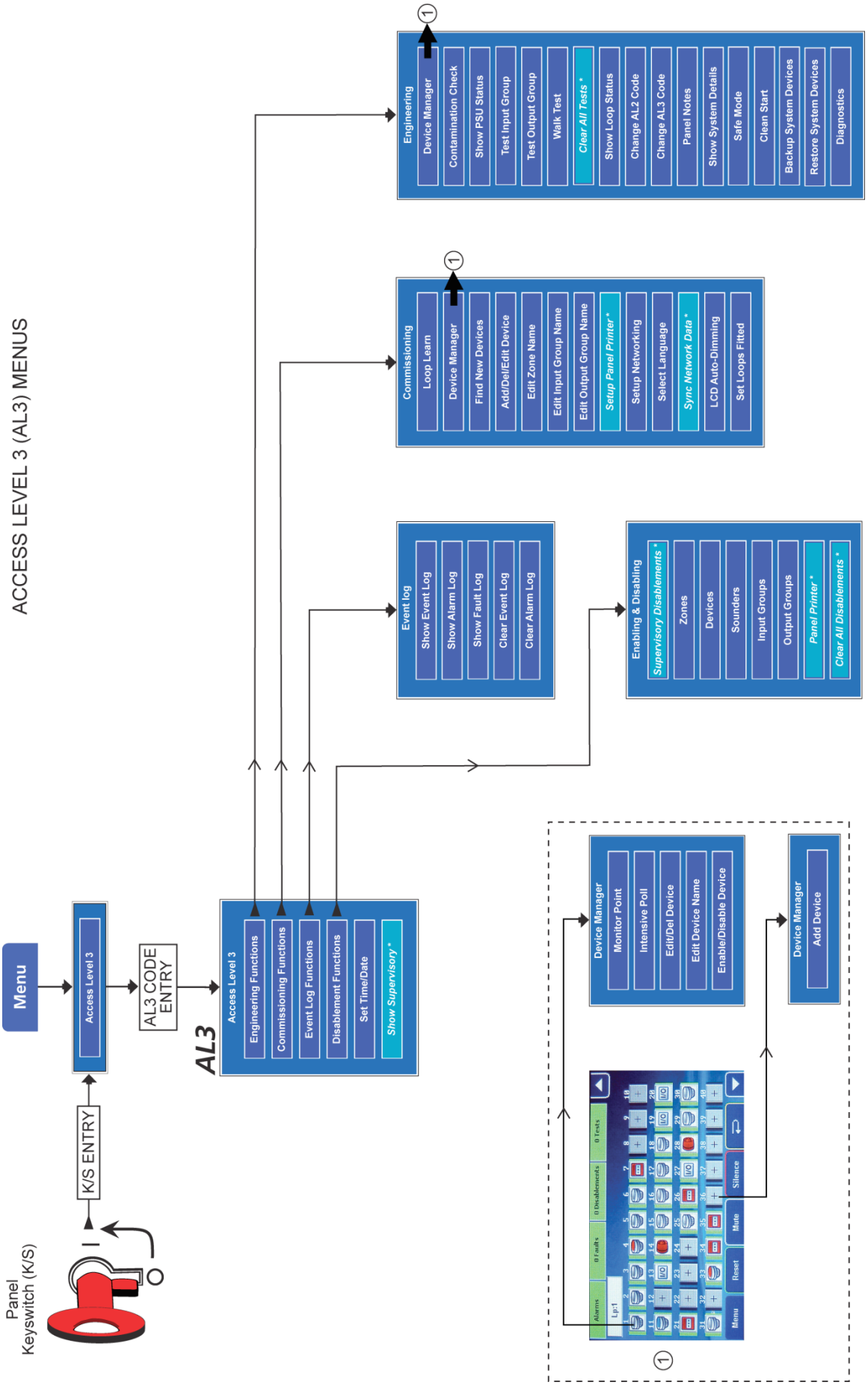
PSU: Power Supply Unit; that portion of the panel which supplies all voltages necessary for its operation.

SD: Secure Digital (memory card). A non-volatile micro memory card, fitted internally at CONN1 on the Control/Display Module PCB.

Supervisory: None-fire related action, e.g. Open a door, Start a fan, etc.

System Devices: Include panel sounder, panel relay, panel keyswitch, panel touchscreen, etc.

Zones: Geographical location of a device (max. 200 per panel).


ACCESS LEVEL 3 (AL3) MENUS
Panel Keyswitch (K/S)
K/S ENTRY
Menu
Access Level 3
AL3 CODE ENTRY
AL3
Access Level 3
Engineering Functions
Commissioning Functions
Event Log Functions
Disablement Functions
Set Time/Date
Show Supervisory *
Engineering
Device Manager
Contamination Check
Show PSU Status
Test Input Group
Test Output Group
Walk Test
Clear All Tests *
Show Loop Status
Change AL2 Code
Change AL3 Code
Panel Notes
Show System Details
Safe Mode
Clean Start
Backup System Devices
Restore System Devices
Diagnostics
Commissioning
Loop Learn
Device Manager
Find New Devices
Add/Del/Edit Device
Edit Zone Name
Edit Input Group Name
Edit Output Group Name
Setup Panel Printer *
Setup Networking
Select Language
Sync Network Data *
LCD Auto-Dimming
Set Loops Fitted
Event log
Show Event Log
Show Alarm Log
Show Fault Log
Clear Event Log
Clear Alarm Log
Enabling & Disabling
Supervisory Disablements *
Zones
Devices
Sounders
Input Groups
Output Groups
Panel Printer *
Clear All Disablements *
Device Manager
Monitor Point
Intensive Poll
Edit/Del Device
Edit Device Name
Enable/Disable Device
Device Manager
Add Device
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